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23rd ANNUAL STATISTICAL ISSUE

AUTOMOTIVE INDUSTRIES

LAND — AIR — WATER

MAR 7 1941

MARCH 1, 1941

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DIES STAY CLEAN... SCRAP REDUCED WITH

STANOSTAMP

● MINOR adjustments and changes are to be expected where a new deep drawing operation is being set up. But when the production engineer in a Michigan plant found it necessary to scrap up to 40% of the auto dash panels turned out on one machine, he was almost convinced that it would be cheaper to throw away the dies and start over.

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AUTOMOTIVE INDUSTRIES
The AUTOMOBILE

Reg. U. S. Pat. Off.
Published Semi-Monthly

Volume 84 Number 5

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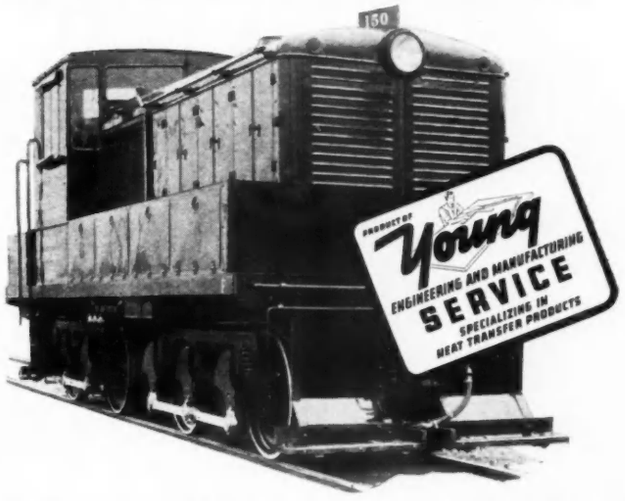
What's Your Problem
IN DIESEL ENGINE COOLING?



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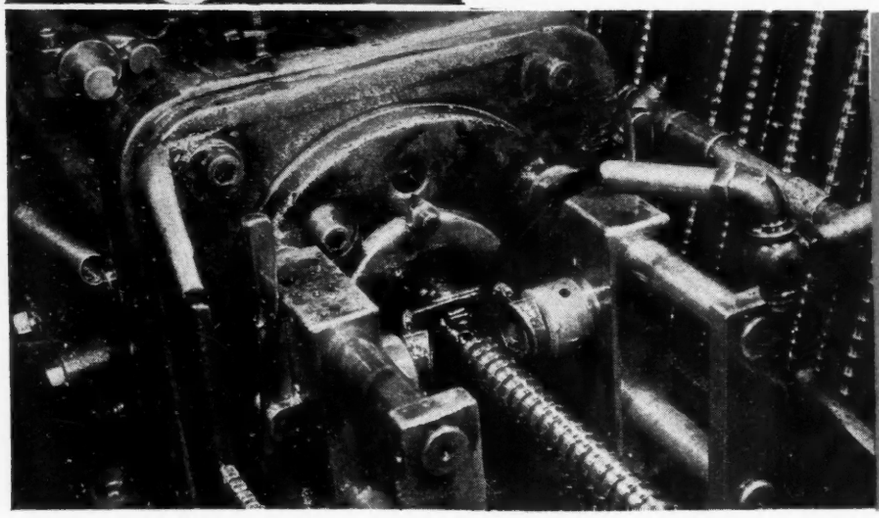
THE BROACH STAYS Cool!



OIL GEAR BROACHING MACHINE and the universal-joint forging in which it broaches a 5½" splined hole . . . showing big improvements over previous coolant, plus a 20% increase in broach life. *Texaco Sultex Cutting Oil "DD"* used.

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- ★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.
- ★ More copper is produced in the U. S. by mines using Texaco Products than by all other copper mines combined.
- ★ More stationary Diesel horsepower in the U.S. is lubricated with Texaco than with any other brand.
- ★ More Diesel horsepower on streamlined trains in the U.S. is lubricated with Texaco than with all other brands combined.

BROACHING splined holes in this universal-joint drop forging, the chips *fall off,* the broach runs cool, the finish is better, with no welding, no tearing. The broach itself lasts 20% longer.

All this from the use of *TEXACO SULTEX CUTTING OIL "DD."*

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TEXACO Lubricants

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IN THIS ISSUE . . .

AUTOMOTIVE INDUSTRIES

Reg. U. S. Pat. Off.

Volume 84 March 1, 1941 Number 5

ACKNOWLEDGMENT

IN THIS Twenty-Third Annual Statistical Issue of AUTOMOTIVE INDUSTRIES there will be found an article on the findings of a survey of the economic effects resulting from the defense contracts received by the automotive industry and its suppliers. This survey is based on returns of a questionnaire sent to all companies in the automotive industry and those manufacturers who furnish it supplies. We, therefore, wish, through the medium of this column, to acknowledge gratefully and to thank sincerely all of those companies who so willingly cooperated in furnishing the requested data. We hope our readers will find this survey of extreme interest.

We are also greatly indebted to Mr. F. A. Gosnell, Chief Statistician, Census of Business, and Mr. T. J. Fitzgerald, Chief Statistician, Census of Manufacturers, for their special efforts to have material prepared in time for inclusion in this issue.

To all of the manufacturers who so willingly cooperated in furnishing the specifications of their products we extend our sincere thanks and appreciation. Also mention must be made of the splendid work and assistance of John Yerger, Associate Editor, *Chilton Flat Rate Manual*, who compiled the majority of the specification section of this book.

Special mention is also gratefully given to Mr. Paul Mattix, Chief, Motive-Products Division, Bureau of Foreign and Domestic Commerce for supplying export data and to Mr. George Quisenberry, Editor, *The American Automobile (Overseas Edition)*, for furnishing the registration statistics of foreign countries.

The writer also sincerely appreciates the splendid cooperation of the motor vehicle commissioners of the various states who so willingly and carefully filled out our questionnaires regarding total registrations in their states.—M.A.

Page

The Automotive Industry's Contribution to National Defense **196**

Here you will find the results of a survey which forecasts the amount of new plant space, the dollar volume of new plant equipment, the number of additional employes required and the additional payrolls to be met by the automotive industry and its suppliers in order to carry out their share of the defense contracts.

Military Aircraft **198**

AUTOMOTIVE INDUSTRIES presents in this issue the chief characteristic specifications of our Army and Navy military planes together with illustrations of aircraft of each general type used in various branches of the two services.

Passenger Cars in Use **202**

So much interest was created by our estimates of passenger cars in Use by Makes and by Year of Manufacture in past Statistical Issues that it was decided to enlarge upon these data. Among the following pages will be found an actual count of cars in use by states, by makes and by year of manufacture back through 1927.

Production Data **210**

Motor vehicle production broken down into passenger cars and trucks with the wholesale value of each for many years back will be found in this section. Also passenger car and truck production by months from 1929 through 1940 together with car production by price classes and truck production by capacities.

New Registrations **212**

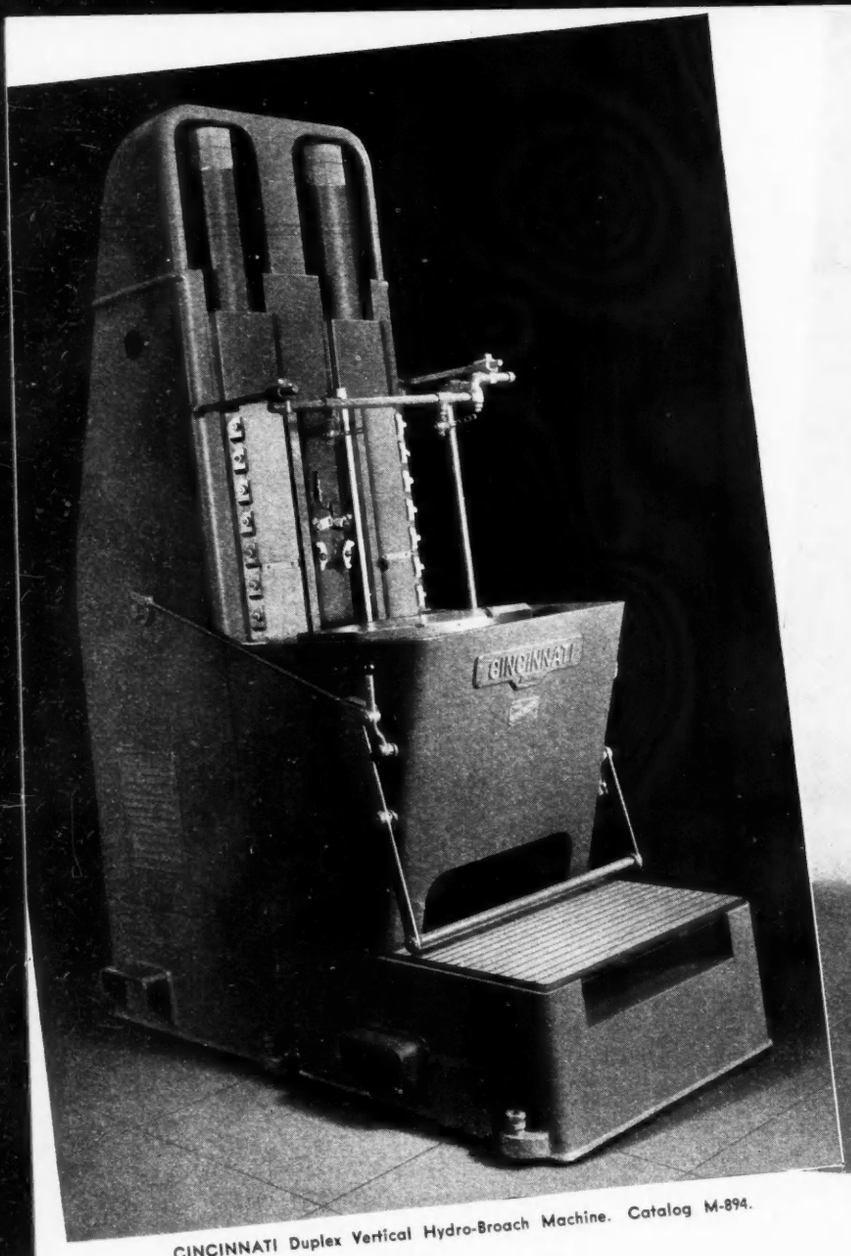
Here is a complete record of passenger car and truck new registrations (sales to consumers) by makes, by states and by years. Following this record of past performance are complete tabulations showing the number of retail outlets for passenger cars and trucks by make of vehicle and by population groups.

Total Registrations **215**

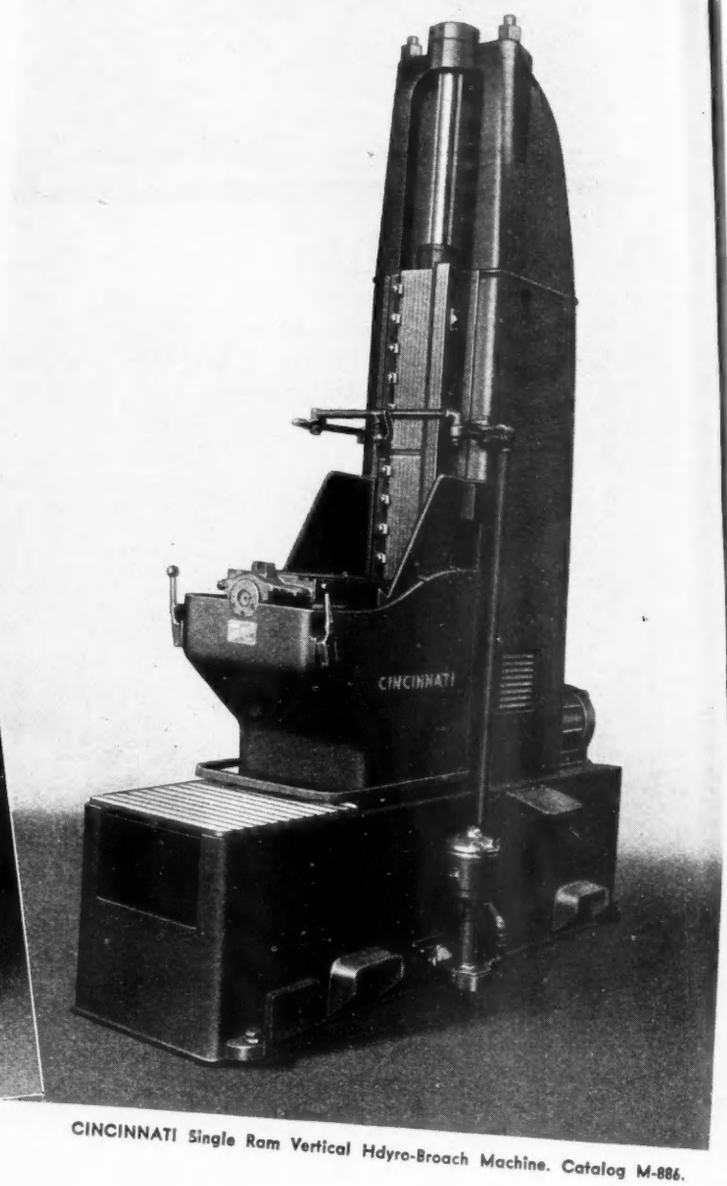
Of paramount interest to parts and accessory manufacturers and the dispensers of every type of material used by motor vehicles is a count of cars and trucks that have been registered throughout the country during the past year. Under this section will be found a census of the cars, trucks and buses by states with comparative data for 1939.

Specifications **222**

Under this section are shown the dimensional characteristics of passenger cars, trucks, buses, tractors and complete data regarding the engines which power these various types of vehicles. Also included are detailed specifications of all standard American aircraft engines.



CINCINNATI Duplex Vertical Hydro-Broach Machine. Catalog M-894.



CINCINNATI Single Ram Vertical Hdyro-Broach Machine. Catalog M-886.

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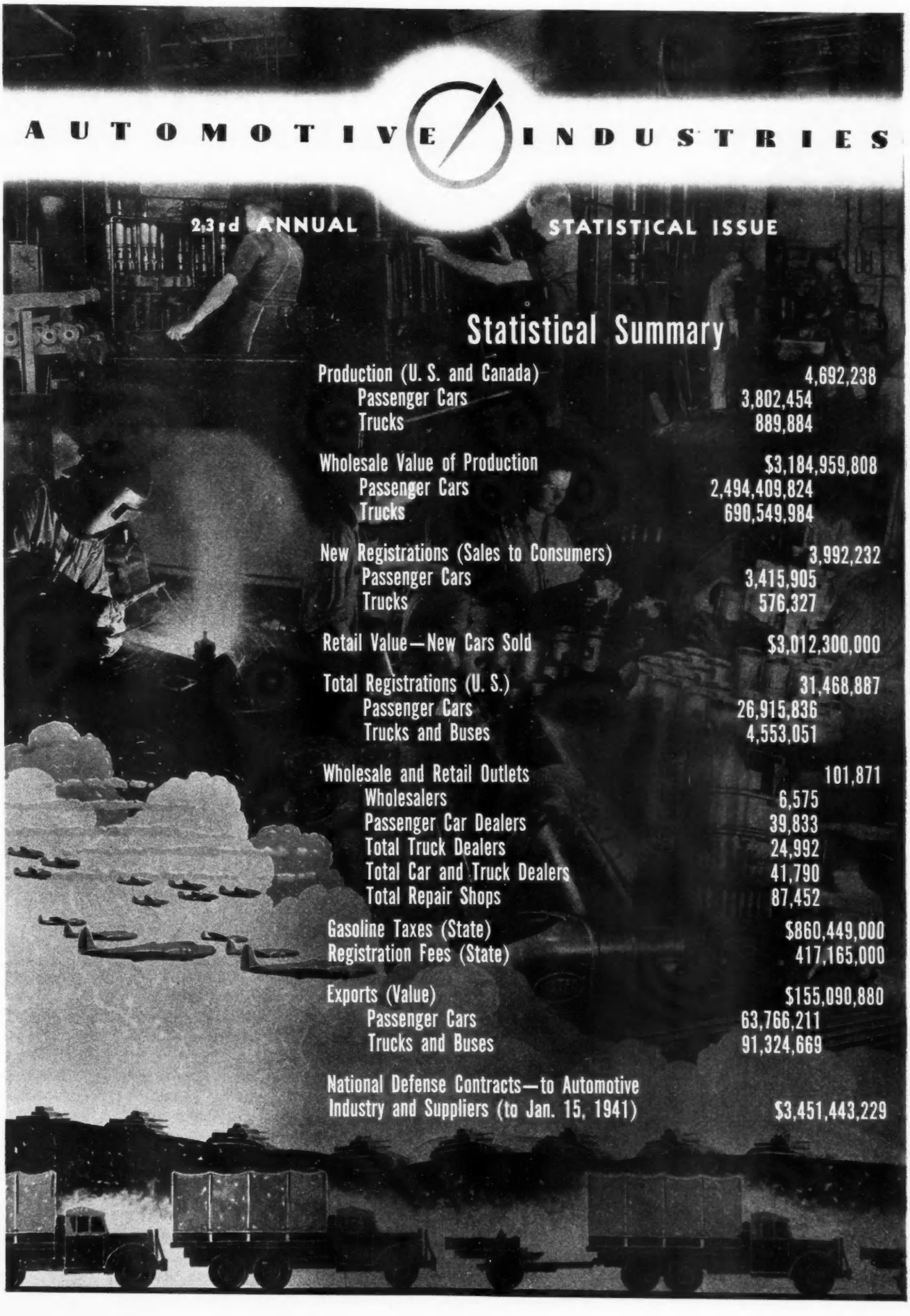


AUTOMOTIVE INDUSTRIES

23rd ANNUAL STATISTICAL ISSUE

Statistical Summary

Production (U. S. and Canada)	4,692,238
Passenger Cars	3,802,454
Trucks	889,884
Wholesale Value of Production	$3,184,959,808
Passenger Cars	2,494,409,824
Trucks	690,549,984
New Registrations (Sales to Consumers)	3,992,232
Passenger Cars	3,415,905
Trucks	576,327
Retail Value—New Cars Sold	$3,012,300,000
Total Registrations (U. S.)	31,468,887
Passenger Cars	26,915,836
Trucks and Buses	4,553,051
Wholesale and Retail Outlets	101,871
Wholesalers	6,575
Passenger Car Dealers	39,833
Total Truck Dealers	24,992
Total Car and Truck Dealers	41,790
Total Repair Shops	87,452
Gasoline Taxes (State)	$860,449,000
Registration Fees (State)	417,165,000
Exports (Value)	$155,090,880
Passenger Cars	63,766,211
Trucks and Buses	91,324,669
National Defense Contracts—to Automotive Industry and Suppliers (to Jan. 15, 1941)	$3,451,443,229

THE AUTOMOTIVE TO THE NATIONAL

By MARCUS AINSWORTH

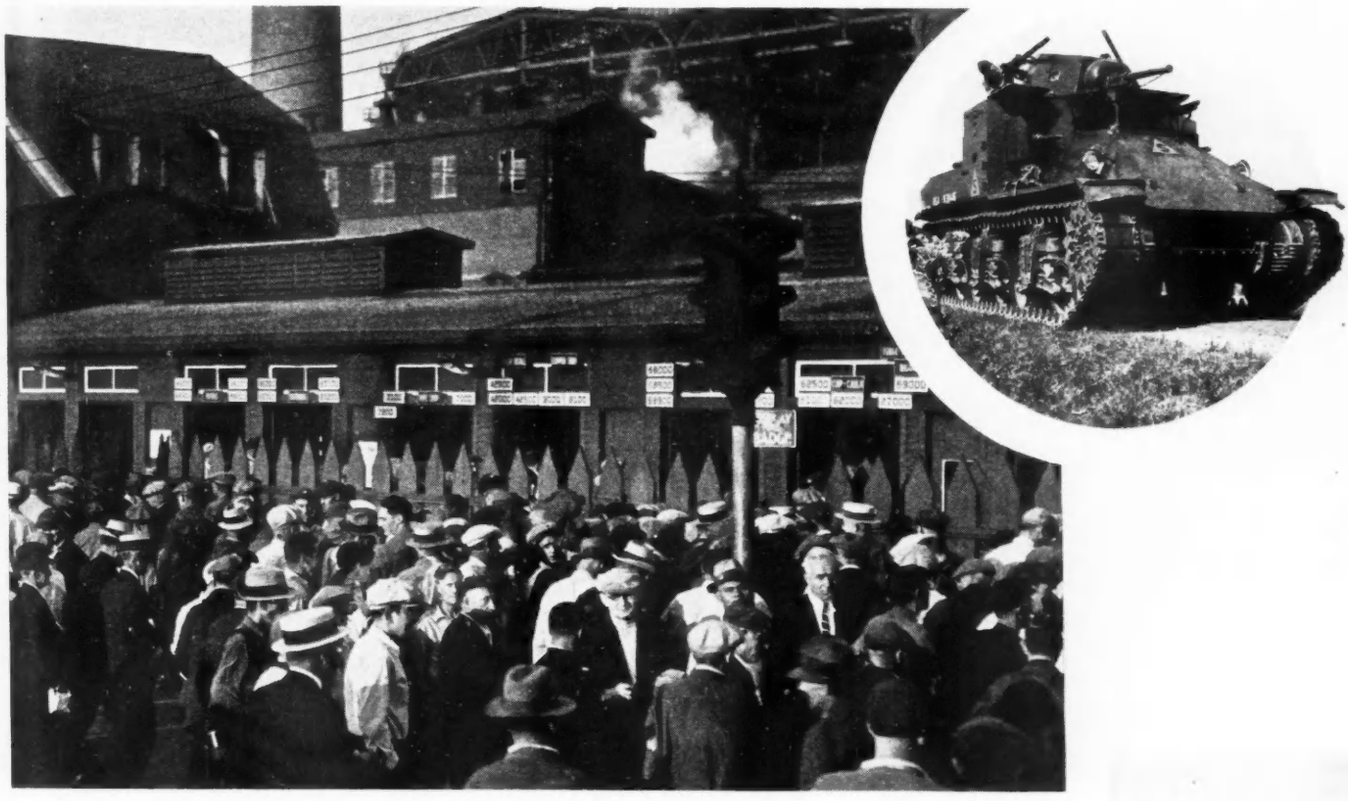
THE automotive industry and its suppliers will need 930,000 new employes and will add one-and one-half billion dollars to their payrolls in order to carry out their share of the defense contracts released by the Federal Government. Eighty million square feet of new plant space will be added to that already existing in this branch of American industry, and approximately $940,000,000 will be spent for new plant equipment. These data apply over and above those existing as of July 1, 1940.

These are the facts developed from a survey just completed by AUTOMOTIVE INDUSTRIES, the purpose of which was to determine to what extent the automotive industry and its suppliers are carrying their share of the burden of producing defense equipment and just how this added production of every type would affect the general economic conditions of the nation.

From these figures it can readily be seen that the automotive industry and its suppliers are, as was to be expected, playing a major part not only in carrying through to completion this huge defense program, but also in relieving unemployment and putting more money into circulation through added payrolls and expenditures for new plant and equipment. To endeavor to estimate how this expansion in and immediately around the automotive industry reflects back to subcontractors and suppliers of raw materials and semi-finished products for munitions is beyond the scope and purpose of this survey.

The automotive industry and its suppliers up to Jan. 15, 1941, had received defense contracts amounting to $3,451,443,229. These figures are exclusive of any Government loans for expansion of plant or purchase of new equipment. They cover the manufacture of items of every type and description from tent poles to the largest tanks, from small nuts, screws and bolts to the largest bombers. From the Office of Government Reports in Washington releases were obtained which furnished the name of every manufacturer who has a definite signed order for the manufacture of some item of equipment along with the value of that contract. From the records of the *Chilton Automotive Buyers Guide* we were able to select from this total list the manufacturers who are in the automotive industry or are suppliers to it. The number of companies selected was 841. A complete alphabetical listing of these companies along with the value of their contracts as of Jan. 15, 1941, will be found starting on page 266.

INDUSTRIES CONTRIBUTION DEFENSE PROGRAM



This three-and one-half-billion dollars' worth of defense contracts allocated to the automotive industry and those manufacturers associated with it represents 31.2 per cent of total defense contracts released for the Army and Navy from July 1, 1940, to Jan. 15, 1941.

Out of these 841 companies, 401, or those manufacturers who, as of Dec. 15, 1940, had received contracts with a value of $50,000 or more were picked out to be the recipients of a questionnaire to determine the facts given in the opening paragraph of this article. It is interesting to note that the value of these defense contracts for the 401 companies amounted to $3,442,648,767, while the contracts of the 440 companies whose individual contracts amounted to less than $50,000, aggregated only $8,794,462.

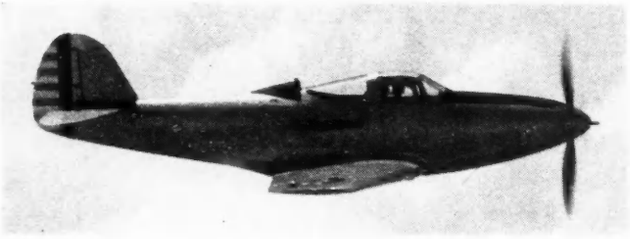
(*Turn to page* 318, *please*)

CHARACTERISTICS OF TYPICAL

·ARMY·

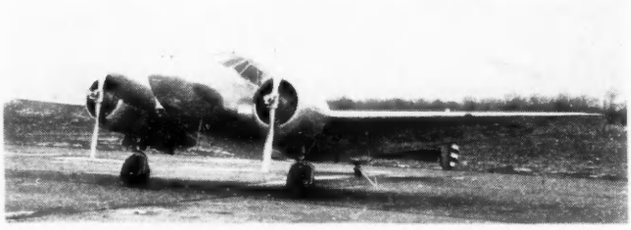
LIGHT PRIMARY TRAINING PLANE as used by the military services and the C.A.B. training program. High wing, externally braced monoplane; steel tubing fuselage, fabric covered; wings and control surfaces fabric covered; single horizontal opposed four-cylinder air-cooled engine; fixed landing gear; fixed pitch propeller.

PRIMARY TRAINER. Open, low wing, cantilever monoplane; 2 places; steel tubing fuselage, fabric covered; spruce plywood covered wings; 6-cylinder in-line air-cooled engine, approx. 175 hp.; fixed landing gear; fixed pitch propeller.



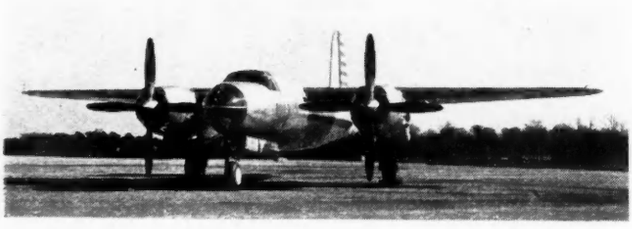
SINGLE ENGINE, SINGLE SEATER, FIGHTER. Low wing, cantilever monoplane; all metal fuselage and wings; twelve-cylinder "Vee" type liquid-cooled engine, 1000 hp.; retractable landing gear; constant speed propeller.

BASIC COMBAT PLANE. Low wing, cantilever monoplane; 3 places; all metal fuselage and wings; tail control surfaces fabric covered; single radial air-cooled engine, 1000-1200 hp.; retractable landing gear; constant speed propeller.



OBSERVATION AND LIGHT BOMBING PLANE. Multiplace; low wing monoplane; all metal fuselage and wings; tail control surfaces metal, fabric covered; two radial 14 or 19-cylinder, air-cooled engines, 850-1000 hp. each; retractable landing gear; constant speed propeller.

INTERCEPTER FIGHTER. Low wing monoplane; 5 places; all metal fuselage, wings and engine nacelles; two liquid-cooled "Vee" engines, approx. 1000 hp. each; retractable landing gear; constant speed propeller, pusher type.



TWIN ENGINE BOMBER. High wing, cantilever monoplane; all metal fuselage and wings; two radial air-cooled 9 or 14 cylinder engines, 850-1000 hp. each; retractable landing gear; constant speed propeller.

LONG DISTANCE FOUR-ENGINE BOMBER. Low wing, cantilever monoplane; 7-9 places; all metal fuselage and wings; four radial air-cooled engines, approx. 1000 hp. each; retractable landing gear and tail wheel; constant speed propeller.

U. S. MILITARY AIRPLANES

• NAVY •

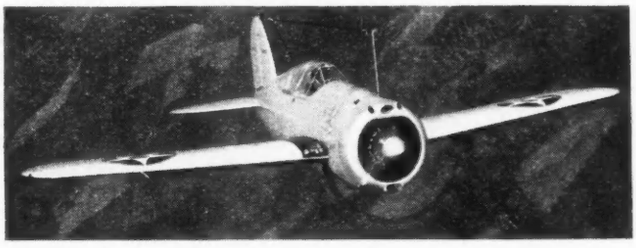
The military planes of which photographs are shown on these pages are representative examples of the present day types used by the U. S. Army and Navy for various purposes in different branches of the two services. The caption below each photograph gives the chief characteristics of the type illustrated. Detailed specifications are withheld at this time by official request. Elsewhere in this issue appear specifications of standard American aviation engines.

CREDIT NOTE—The halftone illustrations of Army planes are made from official photographs of the Army Air Corps. Those of Navy planes are made from official photographs of U. S. Navy. Credit to these two sources is hereby gratefully extended.

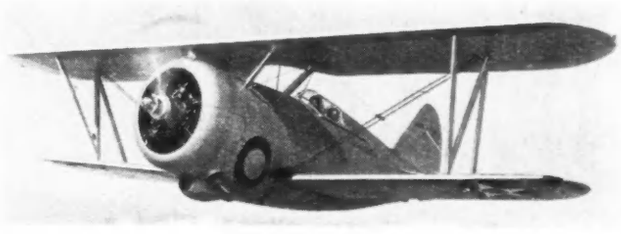
TRAINING PLANE. Biplane; 2 places; steel tubing fuselage, fabric covered; fabric covered wings and control surfaces; radial air-cooled 9-cylinder engine, approx. 300 hp.; metal pontoon; adjustable pitch propeller.

TRAINING PLANE. Biplane; 2 places; welded steel tubing fuselage, fabric covered; wooden wings, fabric covered; 9-cylinder radial engine, 225-300 hp.; fixed landing gear; adjustable pitch propeller.

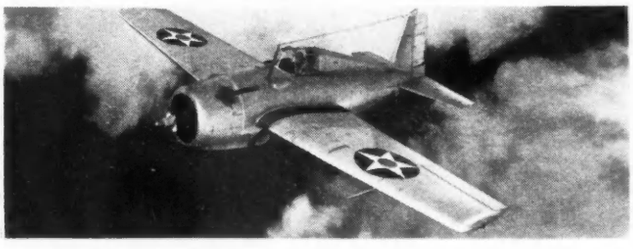
SCOUT TRAINER. Cantilever monoplane; 2 places; combined steel tubing and aluminum fuselage; all metal wings; tail control surfaces, metal frames, fabric covered; 9-cylinder radial air-cooled engine, 400-425 hp.; retractable landing gear.



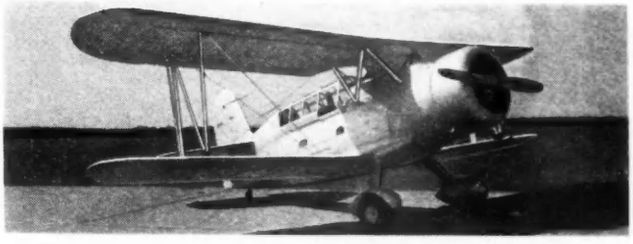
FIGHTER. Mid-wing cantilever monoplane; 2 places; all metal fuselage and wings; fabric covered tail control surfaces; 9-cylinder radial air-cooled engine, 700-800 hp.; retractable landing gear; controllable pitch propeller.



SINGLE SEATER FIGHTER. Biplane; all metal fuselage; metal wings, fabric covered; metal tail control surfaces, fabric covered; radial air-cooled 9-cylinder engine, approx. 750 hp.; retractable landing gear.



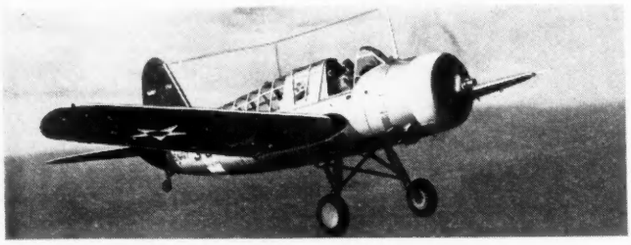
SINGLE SEATER FIGHTER. Low wing cantilever monoplane; metal fuselage and wings; all metal control surfaces; radial air-cooled 9 or 14-cylinder engine, 900-1200 hp.; retractable landing gear; constant speed propeller.



SCOUT OBSERVATION PLANE. Externally braced biplane; 2 places; composite fuselage and composite wings; radial air-cooled 9-cylinder engine; fixed landing gear; fixed pitch propeller.

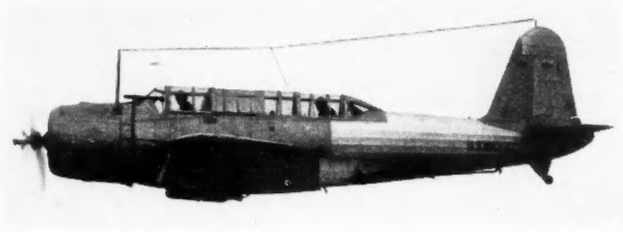
CHARACTERISTICS OF TYPICAL

·NAVY·

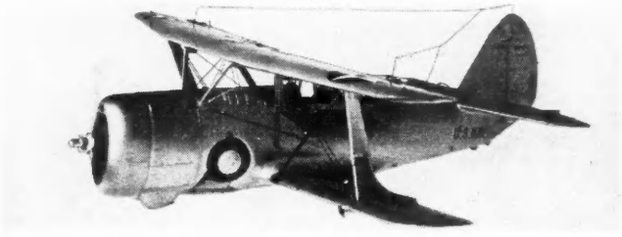


SCOUT OBSERVATION PLANE. Low wing cantilever monoplane; multi-place; all metal fuselage; 14-cylinder air-cooled radial engine, 800-1000 hp.; fixed landing gear; controllable pitch propeller.

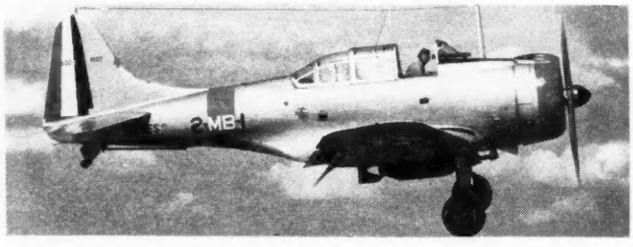
SCOUT OBSERVATION PLANE. Biplane; 2 places, steel tubing fuselage, metal and fabric covered; metal wings, metal and fabric covered; radial air-cooled 9-cylinder engine, approx. 550 hp.; fixed landing gear on land plane; all metal pontoon on seaplane; controllable pitch propeller.



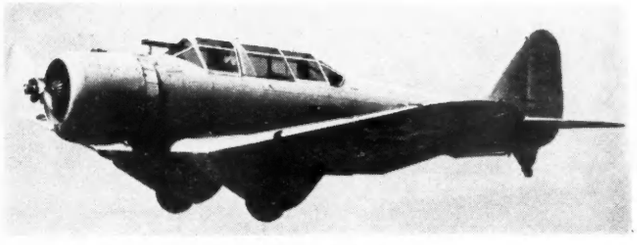
SCOUT BOMBER. Low wing cantilever monoplane: 2 places; steel tubing fuselage, metal and fabric covered; metal frame wings, metal and fabric covered; radial air-cooled 14-cylinder engine, approx., 50-800 hp.; retractable landing gear, controllable pitch propeller.



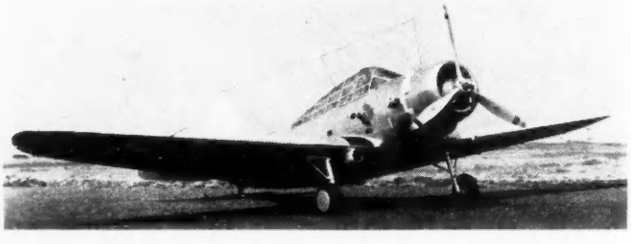
SCOUT BOMBER. Externally braced biplane; 2 places; metal fuselage; radial air-cooled 9-cylinder engine, approx. 850-1000 hp.; retractable landing gear; controllable pitch propeller.



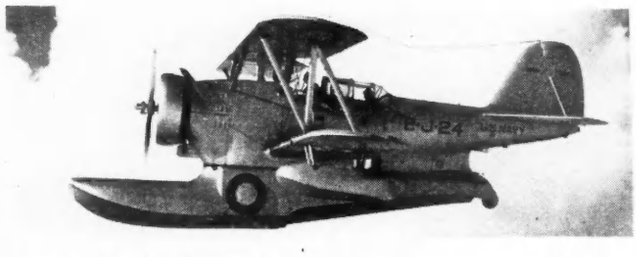
SCOUT BOMBER. Low wing cantilever monoplane; 2 places; all metal fuselage and wings; radial air-cooled 9 or 14-cylinder engine, approx. 1000-1500 hp.; retractable landing gear; constant speed propeller.



SINGLE ENGINE BOMBER. Low wing cantilever monoplane; multi-place; all metal fuselage and wings; radial air-cooled engine, 1000-1200 hp.; retractable landing gear; constant speed propeller.



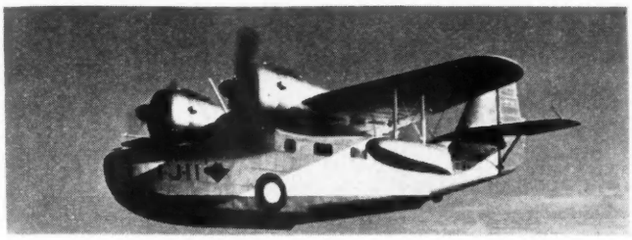
TORPEDO BOMBER. Low wing cantilever monoplane; 3 places; all metal fuselage and wings; radial air-cooled 9 or 14-cylinder engine, 1000-1150 hp.; retractable landing gear; constant speed propeller.



UTILITY AMPHIBIAN. Biplane; 3 places; all metal fuselage and pontoon; metal wings, fabric covered; radial air-cooled 9-cylinder engine, approx. 800 hp.; retractable (amphibian) landing gear; controllable pitch propeller.

U. S. MILITARY AIRPLANES CONT'D

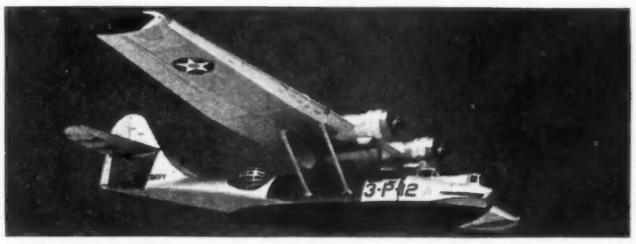
· NAVY ·



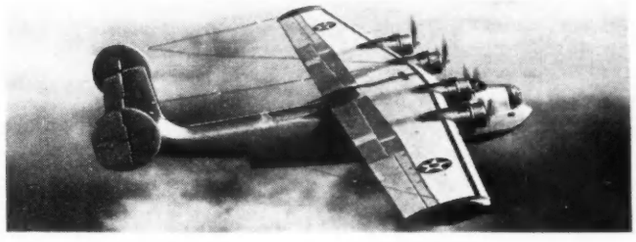
UTILITY AMPHIBIAN. High wing cantilever monoplane; 3-4 places; all metal wings and hull; two 9-cylinder radial air-cooled engines, approx. 400 h.p. each; retractable landing gear; controllable pitch propellers.

LARGE UTILITY AMPHIBIAN. High wing cantilever monoplane; multi-place; all metal hull; two radial air-cooled 9 or 14 cylinder engines, 800-1000 h.p. each; retractable landing gear; constant speed propellers.

TRANSPORT PLANE. Low wing cantilever monoplane; 24 places; all metal fuselage and wings; two radial air-cooled 9 or 14-cylinder engines, 1000-1200 h.p. each; retractable landing gear; constant speed propellers.



PATROL BOMBER. High wing monoplane; all metal hull and wings; two radial air-cooled 18-cylinder engines, 1200-2000 h.p. each; constant speed propellers.

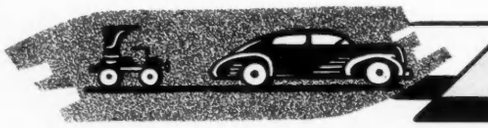


LONG DISTANCE BOMBER. High wing cantilever monoplane; full living quarters for crew; all metal hull and wings; four radial air-cooled 18-cylinder engines, 2000 h.p. each; controllable pitch propellers.

Airports, Landing Fields and Seaplane Bases*

	Airports and Landing Fields	Seaplane Bases and Anchorages		Airports and Landing Fields	Seaplane Bases and Anchorages		Airports and Landing Fields	Seaplane Bases and Anchorages		Airports and Landing Fields	Seaplane Bases and Anchorages
Alabama	34	1	Indiana	51	1	Nebraska	43		South Carolina	29	5
Alaska	129	9	Iowa	34	..	Nevada	21	1	South Dakota	22	..
Arizona	44	..	Kansas	36	..	New Hampshire	12	6	Tennessee	21	..
Arkansas	25	1	Kentucky	19	1	New Jersey	28	5	Texas	146	11
California	174	6	Louisiana	26	9	New Mexico	37	..	Utah	21	..
Colorado	36	..	Maine	18	21	New York	92	49	Vermont	11	3
Connecticut	17	12	Maryland	20	4	North Carolina	34	6	Virginia	49	5
Delaware	7	..	Massachusetts	40	37	North Dakota	34	..	Washington	51	9
Dist. of Columbia	3	2	Michigan	116	29	Ohio	105	9	West Virginia	27	2
Florida	122	37	Minnesota	28	6	Oklahoma	41	..	Wisconsin	47	15
Georgia	55	2	Mississippi	32	3	Oregon	30	3	Wyoming	33	..
Idaho	46	..	Missouri	37	..	Pennsylvania	107	9			
Illinois	66	2	Montana	70	1	Rhode Island	5	3	Totals	2331	325

* Civil Aeronautics Administration, Jan. 1, 1941.



CARS IN USE BY MAKES,

Model	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.†	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
BUICK																									
6 Mo. '40	1429	595	819	9836	1758	4535	450	2629	3390	2617	791	18125	6218	3211	2207	2057	1869	1257	2125	8325	16109	4135	1092	3924	751
'39	1429	578	899	17448	1747	3980	525	2188	3283	2387	474	16687	4033	3141	1976	1840	1869	1059	3362	7576	11644	4026	1165	4651	812
'38	979	583	512	15543	1346	3160	441	1652	2790	1681	403	12756	3890	2469	1508	1393	1317	911	2400	5738	7207	3034	549	3520	609
'37	1128	752	592	20629	2117	4506	558	1799	2981	1904	657	16168	5161	2946	2022	1885	1232	1104	2444	7324	12340	3548	691	4025	792
'36	865	562	427	16088	1646	3659	438	1346	2355	1482	56	11710	3823	2208	1677	1398	965	1000	2012	6460	7877	2923	490	3114	571
'35	358	179	179	7001	430	1103	166	386	789	597	115	4129	1968	864	582	490	309	316	1119	1946	2235	997	198	1222	122
'34	312	231	140	4904	530	1632	163	398	875	648	123	4213	1259	723	634	488	313	462	595	3055	2315	1001	189	1141	157
'33	174	153	60	3564	359	1239	113	310	552	379	60	3020	709	361	382	290	163	266	343	2078	1207	712	86	794	130
'32	186	150	76	3891	467	1406	125	368	595	457	77	2503	771	484	431	304	204	396	324	2498	1558	794	72	919	120
'31	310	326	123	7878	1078	2493	233	394	971	735	267	4423	1547	1510	962	607	190	786	566	3752	2898	1813	148	1495	239
'30	246	373	107	8443	846	1793	205	243	568	540	284	4496	1319	1328	1031	521	145	466	579	2434	2840	1425	193	1232	199
'29	179	410	127	10648	909	972	209	120	428	438	339	3779	1493	1419	1029	482	130	393	522	1175	2639	1425	205	1308	293
'28	181	337	94	9298	825	899	192	93	380	495	330	3487	1437	1562	1032	395	118	353	418	884	1924	1472	195	1191	286
'27	112	245	52	8905	594	617	163	46	290	330	241	2634	1408	1396	802	246	61	279	358	519	1705	1377	119	926	184
Before '27	75	253	44	10109	559	411	183	31	399	218	273	1986	1275	1510	767	226	45	246	342	348	965	1887	88	905	172
Unid.*	25	3	4	31	4	20	5	197	57	111	2	210	40	8	28	7	151	5	4017	32	2934	13	16	141	
Total	7988	5730	4255	154216	15215	32425	4169	12200	20706	15019	4892	110326	36351	25140	17070	12629	9092	9299	21526	54144	78397	30582	5486	30508	5437
CADILLAC																									
6 Mo. '40	31	28	22	669	67	304	25	113	255	126	22	877	259	63	36	46	70	55	55	380	499	97	14	131	18
'39	52	38	36	1464	84	350	43	130	293	131	14	1181	180	71	64	81	114	69	135	474	460	137	24	252	34
'38	41	31	19	1311	57	250	34	109	278	109	6	773	195	48	42	48	52	43	98	370	270	83	16	202	15
'37	40	45	22	1396	88	387	41	167	300	128	7	1067	190	94	39	93	71	64	125	679	413	124	10	185	6
'36	41	38	20	1536	84	337	42	143	293	105	10	1013	192	77	53	64	64	63	112	612	394	114	9	223	13
'35	9	11	2	932	23	95	19	63	67	35	7	329	86	20	17	38	19	21	61	205	88	33	3	105	2
'34	21	14	7	598	37	163	16	48	115	39	2	362	68	26	16	42	20	26	29	274	98	40	4	97	3
'33	4	7	3	407	23	94	9	38	54	17	3	165	28	12	10	39	19	12	18	147	56	31	8	45	3
'32	12	9	1	624	29	107	14	40	66	53	5	213	48	18	22	22	10	10	34	161	141	27	5	49	7
'31	17	31	9	1191	71	410	35	65	137	74	12	485	127	72	46	54	13	41	39	507	257	116	12	97	12
'30	13	28	6	1179	32	229	25	33	81	27	7	235	85	45	24	47	9	40	35	272	124	55	12	65	8
'29	14	38	9	1060	32	171	23	14	52	29	4	216	63	30	19	55	6	21	22	178	128	40	7	73	9
'28	2	23	4	1035	31	90	19	10	27	21	10	106	53	26	16	26	2	9	17	83	42	44	10	54	11
'27	11	9	2	556	14	49	9	8	10	4	2	101	32	19	12	11	1	8	20	38	25	22	5	23	12
Before '27	8	27	3	962	51	74	17	4	36	10	14	111	42	54	10	19	4	13	15	58	38	57	9	43	15
Unid.*	1			6		6		9	9	13		15	1	3			13		270	6	206	2	1	10	
Total	317	377	165	14926	723	3116	371	994	2073	921	125	7249	1649	678	426	685	487	495	1085	4444	3239	1022	149	1654	168
CHEVROLET																									
6 Mo. '40	7566	1815	4542	25626	5357	8173	1207	5528	8479	9373	2884	41679	18486	14732	9216	8292	8129	3041	6816	14690	37639	14899	5154	20841	2997
'39	9066	2064	5625	37184	5891	6764	1403	4251	8623	10411	2428	38294	14454	16991	9909	8563	8562	3000	8660	15890	29047	14720	6569	21822	3179
'38	5443	1944	4150	33832	4991	4857	1175	2510	6499	6330	1942	30490	13467	15210	10252	7220	7060	2451	5870	11433	18263	15588	4783	17289	2331
'37	10987	3452	5656	52895	8503	10444	1876	4108	10776	12069	4059	49631	26619	21868	15655	11250	9646	4227	9115	23388	47842	20378	7373	23840	4322
'36	11837	3672	6695	63229	10388	10767	2137	4318	12232	13151	4691	57936	32545	25657	19207	12806	12075	4817	9588	23534	50009	24979	8521	28577	5309
'35	7495	2130	4309	43604	5897	6633	1419	2411	7304	9821	2753	31854	20297	15150	12053	8700	6451	2900	6319	15150	25340	14777	5316	17334	3298
'34	8276	2232	4279	31078	5469	6917	1288	1721	8164	9718	2508	26877	15165	13077	11074	7849	6401	3049	4792	15012	21512	12519	5945	14839	2568
'33	5485	1681	3613	30797	4387	7447	1109	1001	6058	7887	1478	22163	11784	10580	9052	6800	4560	2495	3541	13903	16427	10389	4379	13538	1834
'32	2637	942	1899	16691	2767	5220	668	908	3778	4406	798	13467	7260	6822	5557	4364	2640	2022	3138	9165	9952	7650	2310	9185	1105
'31	4676	1875	2767	36391	6531	7630	1257	779	7270	7986	2164	24951	14785	17244	11506	8579	3662	3468	4991	11782	16390	16490	2867	17526	2004
'30	2607	1662	1993	33119	5760	3888	914	270	3534	4090	2631	18385	10313	17329	10742	6097	1936	2171	3391	5028	10568	14594	2415	14345	2010
'29	3670	2145	2871	30467	4844	2234	865	102	2937	4962	2760	15844	11459	17021	11220	6347	2075	1439	1794	2139	12907	12720	3467	12681	2391
'28	2658	1291	2581	21216	3560	850	572	46	1417	2904	1794	10508	7895	9132	7427	3417	1148	786	1147	700	6282	8580	2076	10954	1819
'27	1073	445	812	8792	1347	221	228	27	552	940	639	3379	2629	3982	2252	1021	303	205	462	150	1868	4583	608	3600	746
Before '27	574	238	438	7256	765	115	163	8	472	529	538	2296	1867	2590	1498	603	123	133	339	86	1517	2819	445	2410	447
Unid.*	120	5	53	72	51	59	33	944	262	1000	42	568	108	31	202	52	1441	8	18914	121	12089	111	167	1206	16
Total	84168	27593	52283	472249	76508	82219	16314	28932	88357	105577	34109	388322	209134	207216	146822	101950	76212	36212	88777	162221	317632	196398	62396	229987	36376
CHRYSLER																									
6 Mo. '40	415	234	248	4376	663	1100	101	675	988	647	274	4569	1991	929	738	728	471	285	931	2023	3951	1343	243	1361	340
'39	410	241	276	6456	589	930	117	733	1011	619	202	4789	1439	980	704	702	503	273	1028	1993	2928	1347	236	1341	348
'38	195	187	189	4320	361	608	83	458	657	323	176	2925	1185	656	526	565	398	203	642	1258	1626	960	157	979	277
'37	382	504	325	8135	983	1468	154	734	1239	779	399	7153	2736	1343	1019	1029	655	409	1151	3124	3876	2027	272	1621	590
'36	219	211	181	6396	587	805	99	457	695	446	216	3737	1540	905	608	610	297	188	655	1528	1823	1110	143	1048	416
'35	135	122	100	3619	314	501	62	243	508	308	147	2528	1046	626	423	499	171	140	557	1073	1216	827	103	720	267
'34	180	90	105	2185	296	609	46	176	458	300	81	1547	640	418	337	388	151	140	233	1084	877	558	90	565	141
'33	119	46	52	2296	213	583	42	152	331	243	40	1637	543	248	230	391	86	96	287	1028	804	424	47	562	79
'32	128	49	36	2206	202	607	43	150	367	245	32	1289	484	286	181	321	106	120	194	893	901	603	62	476	64
'31	194	104	85	3610	363	880	69	117	541	316	117	1881	898	642	286	538	163	250	290	1127	1000	1015	75	639	127
'30	196	137	110	4185	396	858	71	75	405	216	165	2141	823	775	425	544	120	336	274	955	926	1142	125	710	167
'29	151	189	86	5845	442	677	78	52	307	207	163	2030	935	599	448	411	97	204	245	553	1257	904	149	615	179
'28	128	204	121	5791	502	457	76	27	210	161	249	1353	920	789	664	361	63	201	162	307	961	1156	121	681	313
'27	63	155	71	4078	361	212	51	10	127	79	143	817	553	499	500	236	29	113	110	122	511	734	57	474	179
Before '27	42	144	52	3496	248	140	42	5	170	60	100	534	475	305	265	146	25	55	63	81	325	342	44	279	98
Unid.*	4	3	2	21	7	5	1	83	16	50	4	68	9	4	16	4	54	3	1919	15	1015	11	6	74	2
Total	2961	2620	2039	67515	6527	10440	1135	4147	8030	4999	2508	38998	16217	10004	7370	7473	3379	3021	8801	17169	23997	14503	1936	12145	3587
DE SOTO																									
6 Mo. '40	303	139	124	3167	312	1048	58	469	473	454	210	3959	1415	434	443	319	272	217	444	1444	2547	785	124	924	165
'39	397	183	166	5475	399	980	80	500	638	454	199	4019	1469	572	436	454	302	249	612	1722	2218	1061	191	1497	181
'38	216	152	114	4301	281	690	59	253	401	247	110	2582	1006	394	425	285	247	172	390	1038	1281	823	116	940	122
'37	411	370	203	8101	720	1662	117	540	772	515	282	6394	2604	817	875	626	341	389	696	2142	3727	1803	149	1893	248
'36	116	243	70	6350	332	731	72	203	441	232	166	3092	1403	593	490	354	161	102	312	831	1384	797	68	839	195
'35	87	121	63	3755	187	512	44	120	273	199	107	1871	921	438	327	215	108	80	255	462	785	436	51	519	97
'34	51	64	29	1281	103	220	17	42	179	84	45	889	351	147	161	92	67	64	83	364	433	152	23	254	58
'33	45	59	20	2691	120	527	32	61	131	120	27	1734	836	196	239	230	97	77	167	632	619	260	18	616	34
'32	67	70	39	2485	111	534	34	72	199	136	49	1515	914	241	266	254	94	92	193	587	944	361	18	778	44
'31	90	96	42	2785	116	574	32	53	165	151	91	1182	1022	228	194	255	128	116	98	318	738	275	28	431	78
'30	92	118	60	2856	199	588	34	19	161	116	131	1291	689	286	243	256	109	120	82	312	633	377	57	320	98
'29	81	253	76	4834	367	507	52	11	192	135	185	1625	1179	417	477	338	148	95	91	300	1008	520	83	514	163
'28																									
'27																									
Before '27																									
Unid.*	17	3	2	7	4	5	1	58	16	33	7	60	39	5	16	10	54	1	1071	8	639	6	9	66	1
Total	1973	1871	1008	48088	3251	8576	632	2401	4041	2876	1609	30213	13848	4768	4592	3688	2128	1774	4494	10160	16956	7656	935	9591	1484
DODGE																									
6 Mo. '40	1535	448	706	7259	1210	2243	155	1586	2338	1917	603	11328	4046	2340	1579	1558	1485	659	1756	5189	10260	2513	582	3003	555
'39	2078	566	1126	15119	1710	2541	234	2117	2700	2418	624	14031	4078	3204	1908	1884	1960	828	2282	6748	10759	3183	826	4910	673
'38	953	403	611	10238	817	1480	147	1051	1571	1045	362	7121	2569	1780	1183	1415	1261	549	1394	3710	3992	2085	375	2548	445
'37	2301	1108	1293	22314	2592	5240	349	2170	3167	2965	1014	21071	7637	3983	3257	3627	2244	1371	2764	10126	15429	5261	915	5759	981
'36	1754	1165	972	25962	2445	4124	341	2161	2852	2198	1052	19447	7407	4006	2775	3123	1996	1149	2502	8337	13588	4319	701	5168	1239
'35	923	686	652	18595	1444	2594	224	1237	1669	1311	718	10879	5416	2903	1857	2189	1126	597	1699	4491	6036	2649	513	3297	799
'34	566	335	388	7301	708	1654	109	497	1147	872	352	5410	2110	1281	990	1226	666	439	823	3390	3028	1144	368	1792	410
'33	436	238	350	7102	785	2024	104	450	974	769	251	6262	2430	1227	1001	1262	558	456	595	2989	4523	1184	206	2620	298
'32	149	95	134	2449	260	557	36	137	287	346	65	1547	741	558	332	391	286	177	228	925	1117	439	91	726	69
'31	241	130	176	3909	541	916	49	138	369	414	150	2415	1206	1046	626	713	316	309	282	1243	1593	859	92	1079	131
'30	230	177	209	4190	591	1049	58	74	355	327	287	2454	1150	1460	834	597	333	325	231	1205	1449	959	146	1077	192
'29	433	320	286	7095	915	1094	89	70	512	499	456	3503	1946	2156	1583	970	412	405	354	1189	2473	1695	259	1539	386
'28	431	373	284	6976	871	574	85	44	437	375	448	2619	1761	2160	1701	812	320	301	320	414	1670	1539	329	1513	435
'27	148	196	114	4091	410	176	42	14	186	156	191	1146	853	804	573	291	104	99	152	128	584	714	103	640	172
Before '27	227	390	244	11840	926	285	103	21	421	235	315	2238	1490	1684	1242	522	142	147	224	178	1269	1582	189	1048	242
Unid.*	26	3	12	22	7	19	4	298	45	168	6	211	18	5	42	18	260	1	4103	37	3355	23	21	226	3
Total	12431	6633	7557	154462	16232	26570	2129	12065	19030	16015	6894	111742	44908	30597	21433	20598	13469	7812	19714	50299	81105	30158	5716	36943	7030

Unid.*—Unidentified as to year of manufacture. †—Year of manufacture estimated. All totals are as of July 1, 1940.

STATES AND YEAR OF MANUFACTURE

Model	Neb.	Nev.	N. H.	N. J.	N. M.	N. Y.	N. C.	N. D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
BUICK 6 Mo. '40	1320	287	552	10227	530	29297	2275	372	13699	1980	2120	12386	754	833	509	1893	7935	640	628	2643	2454	2090	4848	505	201031
'39	1205	225	879	8656	540	24765	2439	427	11206	2310	1681	14464	1415	1208	525	1902	7384	490	630	2529	2355	1476	4410	501	192401
'38	956	209	638	7990	451	20849	2029	319	7452	1941	1351	12160	1014	821	411	1343	6003	438	464	2008	1820	1112	3162	358	151690
'37	1257	282	757	10739	575	25863	2041	238	12937	2462	2076	15375	1226	963	524	1498	6280	631	516	2092	2967	1435	4490	455	196987
'36	1140	194	713	8276	406	21421	1520	243	8599	1920	1344	12044	1097	700	536	1136	4806	459	538	1636	1795	1011	3021	367	150464
'35	422	35	263	2663	174	6746	711	144	2769	731	280	4588	390	290	201	432	1862	138	139	657	447	267	1195	126	53470
'34	369	62	326	3825	154	8450	748	101	3083	711	381	4475	614	274	161	409	1914	188	212	591	677	292	1110	124	55752
'33	192	28	187	2896	65	6985	309	54	1963	487	254	3095	447	165	61	190	972	119	122	349	457	163	756	72	37892
'32	266	50	204	3329	110	8216	334	78	1878	532	310	3439	512	180	81	277	921	133	192	382	587	155	945	81	42368
'31	799	74	415	5001	201	11877	657	183	3086	1024	1046	6423	766	377	272	428	1628	281	319	613	1636	245	1644	156	74895
'30	850	93	283	3623	155	8164	527	150	3085	892	962	5624	481	298	222	367	1215	257	238	345	1588	192	1596	142	63205
'29	1214	110	192	1812	184	4177	409	266	2500	916	982	5738	266	246	309	252	1157	305	210	335	1820	144	1793	173	56581
'28	1577	100	192	1589	171	3687	499	325	2609	840	1066	5276	184	289	444	254	1091	254	212	341	1760	142	1775	157	52712
'27	1019	88	136	1081	93	2253	315	325	2233	713	926	4474	122	181	378	144	639	149	134	186	1314	123	1525	89	42249
Before '27	1253	86	122	691	70	1542	293	695	1767	805	906	5048	74	151	614	69	523	192	114	123	1270	79	1629	86	41520
Unid.*	6	3	3	14	2	147	11		116	7	2	113	3	4	10	129	160	2	2	4	2	7	30	5	8843
Total	13845	1926	5862	72412	3881	184439	15117	3920	78982	18271	15687	114722	9365	6980	5258	10723	44490	4676	4670	14834	22949	8933	33929	3397	1422060
CADILLAC 8 Mo. '40	24	29	25	488	12	1572	73	3	525	53	51	437	44	21	5	71	442	25	17	60	78	65	182	2	8566
'39	22	35	40	691	28	1906	102	5	717	131	74	752	116	37	7	95	557	19	17	94	94	47	220	9	11726
'38	19	19	43	511	16	1311	66	8	445	76	53	587	85	14	3	62	342	17	8	71	74	31	132	6	8499
'37	22	25	36	765	17	2079	87	5	716	104	65	715	108	33	1	68	351	23	21	97	127	60	189	8	11503
'36	28	21	38	767	18	1775	85	5	664	116	77	742	119	19	8	63	298	18	23	75	112	46	147	12	10928
'35	10	3	18	256	2	552	20	1	194	35	14	330	28	8		24	84	8	3	16	30	10	46	2	3984
'34	12	7	8	312	5	734	21	3	212	29	23	279	41	5		15	102	8	12	16	50	9	52		4120
'33	8	2	9	184	5	535	14	1	145	18	9	168	23	1	1	18	31	4	6	4	16	9	28	1	2492
'32	8	1	10	306	7	689	15	1	190	28	15	260	23	12	2	22	50	7	6	20	31	10	51		3491
'31	31	12	23	786	15	1753	49	6	373	84	58	602	82	14	8	21	113	29	24	51	101	18	94	8	8285
'30	21	7	5	370	23	729	22	2	233	51	37	434	37	11	4	19	47	15	13	18	62	6	56	2	4940
'29	21	14	16	265	7	547	18	1	162	46	29	379	38	17	2	14	51	26	16	19	73	12	26	2	4114
'28	14	6	8	174	5	293	23	4	95	40	38	338	14	14	4	14	33	20	14	12	57	5	25	6	3027
'27	13	4	6	55		108	13	1	43	18	27	165	11	11	6	7	13	11	6	9	33	4	15	2	1584
Before '27	21	7	6	66	16	159	13	17	65	33	54	301	13	13	9	3	29	13	6	10	52	6	21	6	2633
Unid.*		3		2		5			15			5		1		10	19			1			2		634
Total	274	195	291	5998	176	14747	621	63	4794	862	624	6494	782	231	60	526	2562	243	192	573	990	338	1286	66	90526
CHEVROLET 6 Mo. '40	5348	512	1467	20108	2199	48008	10234	2311	39352	9722	6515	29322	2203	4395	2291	9867	31118	2203	1423	10649	6957	7791	14408	1449	557013
'39	6465	675	2213	16820	2448	41282	13516	2601	30526	11313	5817	34075	3036	7313	2982	9931	32845	2053	1229	11348	7884	5684	13735	1785	580946
'38	6248	540	1767	13793	2125	32876	10323	2704	21584	9462	4755	28526	2090	4734	2607	6947	29905	1818	1084	8418	5782	4318	12143	1402	451381
'37	9273	910	3049	23607	3132	57584	17807	3320	52246	15126	9294	45568	4187	8604	3985	10953	42242	3616	1938	14863	13113	9021	21221	2242	777380
'36	12001	969	3228	25204	3577	62309	16786	3753	59954	17239	10841	51905	4514	8742	4871	12689	52562	4002	2127	16243	14231	10038	25316	2542	884320
'35	6941	561	2324	15861	2191	36817	14883	3092	31734	11438	4900	34469	3447	7034	3313	8983	32035	2430	1300	10606	7151	4535	14127	1621	540508
'34	5834	462	2270	18000	2136	39272	15580	2427	29065	10385	4303	31298	3493	7016	2848	8274	32601	2213	1152	9631	6866	4355	12738	1302	495851
'33	5350	298	2093	17284	1425	39771	10745	1938	23093	8938	3600	26949	3783	6519	2208	6030	30990	1587	1041	7033	5662	3311	9042	938	422016
'32	3341	215	1438	13118	762	31276	5244	1392	14114	5392	2144	16242	2534	2655	1393	3553	14178	932	956	5257	3075	1983	7191	575	264111
'31	8965	413	2265	17458	1319	42892	10534	2841	23999	10121	5338	30512	3419	6679	3644	7134	20748	2084	1302	8644	6979	3218	14370	1188	471537
'30	8970	316	1335	7687	1402	21245	4895	3103	16525	7360	5020	22185	1445	3161	4099	4828	15967	1950	873	5003	7277	2384	12782	986	340581
'29	10899	351	781	4416	1398	13595	5046	3945	16398	6965	5856	20998	689	3956	4985	4769	18369	2078	687	3544	7743	1838	11837	800	323304
'28	7810	205	413	1819	912	6732	3560	3568	9575	4604	4006	13869	249	1904	3613	2898	9638	1251	479	2278	5374	1116	6965	547	204143
'27	2688	77	127	459	260	1864	1150	1503	3317	1837	1621	5543	63	684	1423	759	3076	374	149	847	1982	449	2871	185	74272
Before '27	1861	70	65	268	154	1259	461	1533	2235	1298	1138	3949	18	303	1024	400	1868	176	97	411	1428	201	2067	114	50667
Unid.*	19	1	26	49	6	226	92	11	397	241	4	783	18	23	34	1676	886	3	12	85		65	126	6	42444
Total	102013	6575	24861	195951	25446	477008	140856	40042	374114	131441	75152	396193	35188	73722	45320	99691	369028	28770	15849	114860	101504	60307	180939	17682	6460474
CHRYSLER 6 Mo. '40	458	113	135	3149	211	7978	923	95	4465	554	861	5269	240	285	166	648	2231	222	142	819	790	870	1203	153	61604
'39	453	99	153	2831	214	7754	950	108	4149	637	864	6096	421	366	190	542	2295	189	147	728	773	564	1219	166	62108
'38	373	67	127	2075	170	5928	610	100	2471	448	545	4316	236	201	136	463	1847	133	101	552	582	371	841	118	43220
'37	597	159	270	3851	297	10744	1074	167	7363	856	1046	8114	730	484	299	816	2888	363	215	896	1527	1023	1867	250	88003
'36	413	103	151	2067	181	5576	616	109	3521	538	618	5147	418	208	173	465	1653	199	145	578	843	505	931	143	50227
'35	262	46	104	1409	86	3772	483	95	2326	335	395	3254	298	159	118	291	1243	160	136	365	597	300	774	72	33335
'34	164	32	94	1218	74	3124	458	63	1847	247	324	2426	258	194	71	239	1052	107	77	283	491	279	554	59	25490
'33	93	19	100	1344	59	3575	303	36	1491	223	230	2184	284	120	46	169	679	89	75	251	341	181	438	29	22938
'32	117	27	96	1399	26	3579	312	25	1297	230	218	2244	272	128	61	182	489	48	75	214	326	174	420	43	22047
'31	334	60	151	1927	61	5132	432	92	1889	379	449	3607	377	224	158	223	729	80	129	344	688	264	782	85	33923
'30	459	51	146	1563	90	3935	386	140	1923	391	592	3725	335	147	229	268	661	144	158	278	1169	222	905	62	34256
'29	534	48	104	1172	92	2806	385	206	1648	417	579	4017	206	174	199	185	687	137	172	210	1320	168	868	75	33232
'28	901	52	64	583	74	1733	304	416	1365	405	607	3901	91	127	391	148	524	145	119	177	1082	134	987	89	30397
'27	484	36	56	281	45	925	165	367	955	273	602	2659	45	70	302	49	241	124	79	94	818	75	724	46	19799
Before '27	315	25	42	241	39	600	108	242	587	215	497	2129	43	62	213	36	171	94	34	81	748	43	399	40	14540
Unid.*	3	2	7	7	2	42	6	1	71	2		51	3	3	5	64	88			3		6	12		3774
Total	5960	939	1800	25117	1721	67203	7515	2262	37368	6150	8427	59139	4257	2952	2757	4788	17478	2234	1804	5873	12095	5179	12924	1430	578893
DE SOTO 6 Mo. '40	159	64	125	2021	82	6390	359	73	3632	316	649	3195	173	149	83	443	1079	261	113	608	656	537	1073	82	42569
'39	253	105	197	2219	93	7093	431	117	4094	438	698	4409	316	242	121	474	1441	269	120	686	905	398	1115	126	50814
'38	175	54	153	1454	87	4062	292	72	2306	310	408	3161	137	131	67	312	1089	173	87	461	569	334	671	100	33310
'37	387	146	186	3219	175	7641	566	149	6620	628	1021	6388	511	323	147	635	1671	423	148	787	1393	697	1673	147	72078
'36	209	87	105	1381	72	5412	319	59	2778	385	596	3923	312	97	100	248	778	283	80	472	935	458	895	74	39635
'35	175	31	65	949	52	2314	258	54	1669	222	287	2392	220	64	133	230	658	188	51	299	493	202	535	51	23625
'34	70	14	41	423	25	1020	115	26	704	82	172	967	82	59	33	89	283	68	22	126	275	68	186	23	10226
'33	72	11	67	948	12	2357	121	25	1571	165	217	1804	320	48	33	110	298	64	40	234	363	99	393	15	18975
'32	56	20	89	1065	18	3118	131	22	2062	172	258	1874	313	97	45	119	309	59	48	235	343	125	466	19	21160
'31	93	19	62	533	22	2084	155	25	1371	168	306	1802	244	140	81	133	549	48	64	277	509	113	485	18	18587
'30	124	30	93	563	47	1607	151	44	1233	180	418	1910	196	91	51	128	623	115	52	163	738	100	486	25	18415
'29	385	50	132	701	69	1697	201	157	1680	272	410	2846	125	111	168	89	847	180	76	189	939	135	859	50	26019
'28																									
'27																									
Before '27																									
Unid.*	4		1	18	2	33	5	1	102	2	7	29	2	1	4	36	52	1		11	6		37		2492
Total	2162	631	1316	15494	756	44828	3104	824	29822	3340	5447	34700	2951	1553	1066	3046	9677	2132	901	4548	8124	3266	8874	730	377905
DODGE 6 Mo. '40	893	164	360	5894	405	15071	1917	280	9895	1619	1560	8724	451	735	475	1934	7111	661	305	2162	2091	1834	3103	252	134749
'39	1091	226	659	7072	529	20464	2468	387	11383	2456	1609	13143	851	1320	622	2294	8838	634	385	2669	2711	1320	3802	446	175946
'38	672	137	407	4742	325	12537	1422	241	5549	1538	892	8247	543	658	359	1292	4490	383	273	1567	1426	871	2184	261	100091
'37	1479	344	886	11912	773	29459	2885	557	18746	3677	3041	19603	1687	1623	752	3451	9994	1132	663	3118	4074	2311	6997	693	258795
'36	1758	313	779	10301	527	25113	2386	454	17420	3564	3047	19118	1523	1249	721	2784	7331	1289	531	3237	4105	2168	6036	643	237160
'35	1159	200	516	6098	345	14567	1615	406	9993	2336	1500	12541	1148	879	520	1686	4551	809	296	1856	2525	1295	3867	391	145603
'34	519	89	322	3844	186	8862	1032	175	5500	1135	868	6092	650	570	248	886	2825	450	187	1017	1555	952	1829	221	77030
'33	523	65	317	3898	174	10821	861	123	7084	1084	871	5855	531	550	188	615	2190	299	160	953	1536	774	2061	155	80832
'32	174	22	111	1063	52	3338	364	49	1423	379	231	2028	209	132	96	333	596	66	98	296	324	260	512	46	24394
'31	421	50	161	1241	102	3598	430	123	1892	513	363	2744	321	233	245	516	1080	152	148	526	572	300	1198	110	35982
'30	700	62	147	1204	124	3323	440	146	2171	599	722	3224	307	194	279	560	1285	210	166	378	822	390	1188	103	38703
'29	1297	105	183	1335	219	4248	647	320	3195	936	1154	5016	328	274	554	761	2585	375	192	552	1601	463	1692	221	58892
'28	1642	109	143	852	251	2585	756	507	2511	887	1162	4780	174	307	684	533	2172	331	160	638	1853	335	1725	157	52046
'27	597	52	41	299	106	930	291	206	1067	438	619	2391	53	124	282	198	613	82	53	235	783	108	681	70	22406
Before '27	1163	85	67	523	164	1433	353	597	2384	1064	1352	5734	45	163	585	261	915	179	80	303	1593	181	994	109	47509
Unid.*	3	1	5	19	1	74	40	1	137	29	4	230	3	7	13	209	198	1		11		7	47	2	9980
Total	14091	2024	5104	60297	4283	156423	17907	4572	100350	22254	18995	119470	8824	9018	6623	18313	56764	7063	3697	19518	27571	13569	37916	3880	1500118

Unid.*—Unidentified as to year of manufacture. All totals are as of July 1, 1940. Data from R. L. Polk & Co.

CARS IN USE BY MAKES, STATES,

Model	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.†	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
FORD																									
6 Mo. '40	5389	1046	4454	15774	3556	4770	605	3264	7621	9121	1989	26397	12478	11802	6354	5336	7502	1865	3433	10278	35231	10735	4591	10440	2073
'39	6171	1198	4972	26297	4406	4182	727	3692	7620	9307	1884	28837	11545	13493	6743	6269	8405	1845	5770	11247	31981	11136	5597	12449	2354
'38	3792	1174	2853	24023	3414	3481	605	2316	6041	6062	1393	21706	10055	11209	6040	4169	6072	1760	3607	9361	18529	11319	3154	9741	1949
'37	9519	2455	5584	42728	7819	9749	1221	4762	12583	13914	3519	54222	27001	19366	13022	11086	9993	3873	7434	23423	68251	24175	6421	19307	3788
'36	8001	2826	4996	56776	8432	9614	1258	5983	12905	12675	3378	48952	24665	18578	12601	9231	9445	3646	6356	22951	61431	19492	5995	18141	4298
'35	6651	2245	4357	59272	7011	9195	1196	4784	10176	10079	2793	44210	25165	19641	12486	8923	6324	3355	6207	20672	45828	19809	4973	18298	3826
'34	5808	1913	3733	39058	5548	7247	864	2674	8729	10384	2019	25437	13796	10526	8954	6930	5490	2960	3299	17588	31484	10674	4153	13023	2104
'33	2431	882	1505	21817	2009	3498	432	940	3791	3897	853	11377	6785	4916	3657	3014	1987	1569	1510	8174	13266	5978	2367	5049	1021
'32	1785	849	1469	20384	2101	2817	371	662	3669	3017	673	10112	5898	4550	3691	3267	2182	1303	1538	6356	12312	4728	1524	5437	806
'31	5408	2035	3420	42440	5661	7908	1061	823	9265	12500	1880	26933	14066	12871	8551	8802	4634	4219	2649	14570	19403	16945	2351	12892	1862
'30	7248	3017	6967	73502	8711	8010	1455	694	11010	12243	3709	37649	24659	24541	15280	13199	5297	4237	4390	10462	30142	24428	5182	19087	2927
'29	12141	4517	11496	70849	11616	4819	1579	441	9807	18501	4982	39629	29722	30476	24863	15321	6927	3728	3407	5369	39768	30755	8296	25761	4716
'28	5305	1260	4440	20060	3370	1294	443	107	4289	4582	1476	10826	9413	9536	7941	4785	1620	911	919	920	7241	7495	6216	8036	1417
'27	1408	174	1445	2984	507	94	99	6	656	2147	238	2190	1734	2102	2484	786	414	176	197	217	1921	2209	774	2554	191
Before '27	3723	861	4105	15799	1793	326	395	25	2784	3974	1111	8403	8157	9592	8110	3564	1056	419	765	422	4807	10431	3362	11908	794
Unid.*	167	31	88	145	49	44	24	1272	447	1345	32	669	142	46	207	53	1888	15	18595	116	17163	208	236	1074	12
Total	84947	26483	65884	531908	76003	77048	12335	32445	111393	133743	31919	397549	225281	203245	140984	104735	79236	35881	70076	162126	438758	210517	65192	193197	34136
GRAHAM-GP.																									
6 Mo. '40	6	.....	1	80	6	3	.....	2	22	1	4	44	23	3	9	3	.....	13	8	65	51	8	1	13	2
'39	23	15	3	481	40	118	2	29	97	8	22	284	151	60	44	14	11	43	14	188	253	49	3	85	11
'38	17	19	1	630	25	61	1	22	85	23	25	263	104	90	47	27	14	32	18	130	235	61	1	75	5
'37	22	65	48	1385	141	675	5	72	261	75	106	1056	300	283	119	121	38	128	52	688	933	314	7	217	65
'36	53	88	15	2085	145	505	8	22	236	45	82	936	531	275	91	144	30	98	35	511	898	340	7	280	70
'35	40	89	26	1842	113	546	8	65	301	44	98	977	460	287	183	198	43	98	37	465	993	322	17	303	74
'34	29	31	9	1467	67	197	4	60	168	72	43	655	302	96	89	89	34	84	37	316	539	144	11	259	28
'33	19	7	12	982	68	184	4	73	129	65	22	539	265	77	96	69	20	79	43	339	456	211	7	217	26
'32	16	12	15	1176	56	210	4	45	97	47	29	402	169	76	69	39	23	48	65	232	270	290	13	152	12
'31	21	22	41	1393	128	205	4	37	131	66	36	512	257	157	84	77	37	76	79	224	322	249	9	261	14
'30	42	61	30	1936	202	240	6	41	121	64	78	648	278	331	157	114	36	64	110	262	503	482	21	316	19
'29	67	103	42	3218	205	313	9	20	162	88	97	1209	498	365	211	169	57	74	91	280	776	576	26	364	89
'28	20	64	8	1595	103	50	4	6	55	16	34	530	290	151	106	66	17	22	35	72	262	243	14	137	98
'27	6	11	1	255	21	17	1	.....	7	5	15	86	31	30	19	7	4	13	14	19	49	53	2	22	27
Before '27	.....	14	.....	571	47	18	1	.....	13	4	21	90	41	70	23	16	5	7	8	23	48	86	4	27	20
Unid.*	2	1	.....	5	1	2	.....	17	8	12	1	20	2	1	2	1	18	1	299	7	360	5	1	21	.....
Total	383	602	252	19101	1368	3344	61	511	1893	635	713	8251	3702	2352	1349	1154	387	880	945	3821	6948	3433	144	2749	560
HUDSON																									
6 Mo. '40	717	194	237	3067	600	1144	93	615	1306	906	401	6293	3363	1756	946	618	611	511	420	2030	6711	1061	203	1026	402
'39	550	217	160	4088	524	660	88	431	1026	683	282	3706	1504	1101	838	424	489	387	694	1602	3569	873	130	1081	303
'38	387	137	89	3005	566	505	72	220	937	579	336	2383	1237	939	987	453	414	347	467	1310	2442	915	110	702	248
'37	118	102	42	1574	231	295	33	137	393	237	196	1176	654	318	358	141	186	159	244	809	1366	278	43	294	151
'36	93	97	33	1851	246	417	37	151	380	185	170	1311	673	441	389	172	110	176	151	1018	1511	379	42	337	249
'35	94	94	36	1909	201	294	33	123	245	177	117	1080	654	432	417	127	82	127	114	720	1093	346	34	259	170
'34	77	87	28	1585	238	406	32	122	249	181	67	894	528	442	377	127	53	210	115	1075	1051	281	23	269	91
'33	12	6	2	219	15	44	5	11	34	23	3	100	41	54	56	15	17	35	29	197	110	40	7	42	7
'32	12	19	3	552	47	113	9	28	61	46	9	230	118	86	101	40	15	57	66	298	288	110	6	80	12
'31	31	29	10	1078	154	268	21	36	199	86	45	473	315	310	209	92	33	182	91	518	594	300	7	149	46
'30	24	40	12	1466	159	233	24	33	127	49	53	562	367	304	236	120	27	136	102	367	454	387	15	149	53
'29	31	65	10	2479	193	175	32	23	118	72	53	725	356	263	251	100	31	86	120	296	689	265	30	170	64
'28	29	37	4	904	93	70	13	9	47	40	23	223	116	121	97	33	7	43	53	62	165	157	14	95	32
'27	7	13	9	669	52	30	7	5	24	14	17	139	82	66	43	22	6	26	26	31	92	67	8	53	14
Before '27	9	18	3	810	57	38	9	3	51	15	17	121	76	131	71	26	4	25	41	26	108	95	7	42	26
Unid.*	7	1	1	9	.....	4	.....	24	16	29	2	26	12	2	7	1	43	.....	484	7	707	4	4	18	.....
Total	2198	1156	679	25265	3376	4696	508	1971	5123	3322	1791	19442	10096	6766	5383	2511	2128	2507	3217	10366	20950	5558	683	4766	1868
HUPMOBILE																									
6 Mo. '40	.....	4	3	8	3	2	.....	.....	4	1	1	3	5	6	.....	.....	1	.....	4	17	8	1	1	.....	.....
'39	4	.....	.....	86	15	19	1	23	14	2	.....	137	28	13	1	8	2	.....	5	32	164	69	4	14	1
'38	6	7	3	98	26	49	1	33	11	16	3	143	22	32	4	7	16	3	4	65	141	63	1	6	2
'37	1	1	.....	29	2	.....	.....	.....	5	3	4	47	16	3	2	9	3	2	2	11	34	1	1	8	.....
'36	4	7	3	151	40	104	3	22	26	17	11	136	44	56	13	21	11	9	6	58	109	69	4	23	23
'35	19	27	10	726	60	194	8	75	101	62	20	430	220	160	67	82	24	29	70	246	288	237	10	118	59
'34	21	13	14	462	26	175	6	64	80	77	12	342	142	111	33	91	22	31	13	312	244	176	5	75	12
'33	30	9	5	494	27	140	6	43	28	61	6	321	95	41	32	77	15	23	29	281	140	212	2	124	4
'32	31	3	14	636	40	131	7	57	74	103	5	428	151	57	48	75	34	35	47	346	425	176	12	166	6
'31	65	28	23	1087	86	307	13	74	139	197	19	834	279	206	76	179	73	66	115	512	382	496	35	228	28
'30	48	59	11	1242	127	296	13	20	133	111	31	831	215	300	145	155	79	47	99	289	423	311	39	204	43
'29	71	82	16	2100	160	402	20	37	155	141	33	1185	339	311	174	215	63	72	143	383	844	415	60	355	49
'28	60	36	18	2287	114	292	19	19	126	65	36	763	310	286	148	127	28	64	111	225	347	368	36	217	37
'27	18	22	4	861	51	105	7	4	54	22	33	306	175	141	65	68	8	21	35	40	94	154	8	93	18
Before '27	18	34	21	1346	69	98	10	13	109	22	24	416	193	193	99	46	15	13	55	35	109	263	16	146	23
Unid.*	1	1	.....	3	1	.....	.....	13	3	8	.....	15	2	2	.....	.....	15	1	277	.....	225	2	1	18	.....
Total	397	333	145	11616	847	2314	114	497	1062	908	238	6337	2236	1918	907	1160	409	416	1015	2852	3977	3013	235	1795	305
LA SALLE																									
6 Mo. '40	76	36	39	965	141	540	39	197	434	257	23	1544	426	104	73	122	105	107	118	753	1141	237	35	304	43
'39	95	65	58	2095	182	536	62	266	522	325	21	1736	304	177	85	146	144	132	268	1021	1094	288	56	392	49
'38	50	55	23	1748	98	333	44	165	385	178	19	1140	329	93	82	85	81	79	178	717	617	147	33	301	34
'37	136	96	81	3628	241	712	90	304	681	324	29	2275	567	207	147	247	154	168	293	1505	1427	364	39	554	50
'36	59	48	33	1888	80	236	43	144	285	140	7	949	281	90	72	79	86	75	114	636	556	139	17	305	28
'35	28	24	16	1602	57	201	33	86	192	100	10	651	225	95	64	80	65	50	76	393	406	118	17	219	24
'34	33	17	12	711	52	105	17	41	132	64	2	344	111	45	31	51	28	36	46	291	252	57	5	107	6
'33	7	2	1	381	27	116	9	11	44	26	3	207	22	19	10	17	10	10	24	222	69	41	3	65	1
'32	3	5	2	406	23	96	9	10	43	15	2	206	31	13	15	17	8	16	22	180	113	34	5	54	4
'31	14	15	2	632	44	247	17	40	61	26	.....	375	59	45	18	34	7	47	38	471	159	86	7	72	6
'30	14	19	11	977	58	242	20	21	75	30	4	256	66	53	27	48	5	26	44	293	189	115	12	92	16
'29	17	33	3	1431	68	197	26	14	60	41	11	493	99	66	43	54	11	43	51	294	189	95	15	130	7
'28	20	15	5	1027	35	104	17	9	34	15	6	218	60	19	15	28	9	13	23	61	55	55	10	75	5
'27	3	.....	2	340	13	30	5	4	15	5	3	54	28	13	4	18	1	1	6	37	21	19	2	17	3
Before '27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unid.*	2	.....	1	7	2	1	.....	21	8	10	.....	15	.....	.....	4	.....	12	1	372	11	281	2	2	22	1
Total	557	430	289	17838	1121	3696	431	1333	2971	1556	140	10463	2608	1039	690	1026	726	804	1673	6885	6569	1797	258	2709	277
LINCOLN																									
6 Mo. '40	94	69	67	1025	154	309	21	146	540	207	74	1173	287	188	159	134	269	73	86	485	1065	239	103	370	70
'39	130	77	98	2315	209	321	33	181	629	285	82	1454	368	245	173	174	328	83	152	598	1175	283	121	422	89
'38	74	100	53	2452	168	236	31	137	572	238	67	1083	324	210	154	115	217	73	96	462	949	272	71	395	85
'37	161	156	111	3230	279	378	45	251	839	417	129	1846	572	357	230	197	241	127	179	813	1713	525	125	593	191
'36	74	59	43	2122	149	171	25	129	369	157	82	989	339	206	131	105	128	41	87	512	818	248	47	286	108
'35	5	2	4	263	12	32	2	14	24	12	3	143	31	6	7	13	13	6	10	86	61	18	8	28	1
'34	2	10	3	232	13	32	3	25	40	18	3	200	28	14	9	21	11	7	10	112	73	28	3	38	2
'33	3	3	.....	227	6	45	2	8	15	5	1	123	21	10	9	15	4	2	6	80	40	18	4	31	2
'32	6	10	2	362	14	56	5	20	38	12	2	162	40	20	9	16	15	4	3	126	80	48	2	49	5
'31	3	8	6	333	11	38	4	10	45	7	2	93	27	12	12	14	4	8	13	89	39	28	3	24	3
'30	7	9	2	322	11	36	4	13	23	19	6	113	24	31	16	27	5	8	10	85	45	35	1	14	4
'29	4	11	.....	385	13	36	4	12	21	7	2	100	21	16	10	23	4	4	7	54	40	25	3	17	5
'28	6	4	.....	245	6	10	2	8	4	2	1	54	11	8	10	6	3	4	6	20	14	8	6	6	3
'27	2	4	1	233	3	10	2	1	4	4	2	23	2	2	4	6	2	1	4	13	6	7	1	4	2
Before '27	2	6	4	335	23	10	2	3	20	7	4	34	13	7	6	2	2	4	3	19	17	18	5	6	2
Unid.*	2	3	.....	2	.....	2	.....	11	9	9	1	13	2	3	1	1	24	4	217	3	243	.....	2	15	.....
Total	575	531	394	14083	1071	1722	185	969	3192	1406	461	7603	2110	1335	940	869	1270	449	889	3557	6378	1800	505	2298	572

Unid.*—Unidentified as to year of manufacture. †—Year of manufacture estimated. All totals are as of July 1, 1940.

AND YEAR OF MANUFACTURE—*Continued*

Model	Neb.	Nev.	N. H.	N. J.	N. M.	N. Y.	N. C.	N. D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
FORD 6 Mo. '40	4920	354	906	10478	1266	25452	8792	2028	22870	6719	3492	17835	1155	4120	2097	7641	29952	1433	859	8754	3845	4389	9180	906	385547
'39	5781	470	1678	9553	1643	25051	9526	2377	23007	8080	3368	21479	2190	5959	2503	8135	31231	1703	883	8932	3871	3511	10224	1263	420545
'38	5152	410	1146	8383	1245	22567	7811	2332	14901	6718	2727	17833	1607	3932	2170	4900	24421	1288	717	6660	3289	2417	9063	973	326487
'37	8721	723	2489	21037	2301	58749	14569	3762	58179	13581	7859	36036	3816	8244	4680	10839	41598	3102	1752	13355	11057	7036	21697	2018	762413
'36	9413	962	2714	19616	2549	60662	12967	3105	53216	13996	9093	37132	3825	7543	4553	9450	42213	3497	1845	12622	13498	6574	18613	2110	744394
'35	9060	794	2580	19435	2149	56117	14128	3878	41752	13297	6248	35302	3905	6928	4642	8477	34375	2781	1652	11998	9396	5259	18767	1661	672047
'34	5577	508	2063	13676	1736	39637	11645	2036	28637	9601	3959	25476	2954	7470	2563	7183	28557	1927	1133	8455	6274	4172	9910	1096	470640
'33	2594	205	1198	6934	732	21969	4719	1128	12979	4798	2278	12743	1574	2868	1172	2350	11423	824	618	3500	3484	1752	4823	524	219914
'32	2463	197	1044	5801	675	18007	4162	941	11405	4107	1913	10915	1260	2363	1079	2300	8920	650	680	3521	2907	1653	4694	430	193588
'31	8087	502	2747	14826	1470	41783	16686	2734	25688	11789	5010	31300	4148	13961	3269	8155	22115	1859	1735	8732	7168	4173	10768	1054	492908
'30	13159	741	2201	18456	2247	48881	18968	5109	39060	16185	8593	42951	3293	13280	6913	9690	29364	3700	1755	10837	14293	5980	20015	1489	695196
'29	20533	835	1980	9385	3479	29410	17721	9339	42895	17563	12638	46588	1534	14355	9740	13015	48019	4358	1662	10546	18387	5704	22854	1888	784214
'28	5618	209	474	2041	962	6144	7372	3057	10359	4936	3813	13096	303	3964	3382	2072	12447	1145	313	3484	5727	1509	7419	473	224221
'27	1747	19	68	247	165	1213	1008	736	2022	1087	773	2906	34	1216	464	933	4035	88	97	606	1024	218	1184	60	49657
Before '27	6594	69	181	831	469	3509	4518	5583	8326	4385	2961	11648	84	3653	3483	2155	16458	321	175	2554	3382	888	4691	205	193809
Unid.*	49	7	33	32	14	258	269	9	511	268	10	720	20	36	48	2163	1938	6	14	76	1	90	151	14	50805
Total	109468	7005	23502	160731	23102	459409	154861	48154	395807	137110	74735	363960	31692	99892	52758	99458	387066	28682	15890	114632	107903	55325	174053	16164	6686385
GRAHAM-GP. 6 Mo. '40	3	1	6	15		36		1	337	2	31	49	2	1		1	8			4	9	9	26	2	911
'39	22	11	5	117	4	400	4	3	426	16	122	278	15	6	7	20	74	31	2	41	70	15	124	12	3873
'38	14	12	21	120	5	299	6	7	296	18	148	352	7	16	12	19	87	44	2	34	82	5	83	10	3710
'37	48	51	83	637	19	1264	85	6	1431	83	532	1107	82	24	15	82	237	175	37	114	449	74	402	51	14264
'36	62	44	70	389	12	1107	91	33	1154	107	521	1224	59	12	16	77	253	207	20	162	424	52	366	38	14030
'35	65	30	72	570	15	1812	149	25	1293	125	598	1256	70	44	11	185	329	183	23	199	389	44	343	34	15493
'34	55	12	64	258	5	1023	79	4	779	57	254	791	61	31	8	109	170	89	23	157	230	30	194	7	9320
'33	60	4	50	378	5	1296	52	3	597	41	177	645	52	16	7	44	124	57	23	98	192	26	173	7	8136
'32	34	10	39	314	3	946	20	8	394	46	163	682	57	13	14	47	63	38	19	62	111	44	201	7	6902
'31	69	18	26	366	15	1090	33	22	591	59	259	828	74	28	20	64	154	75	26	80	195	62	281	16	8893
'30	128	16	51	450	14	1246	64	47	739	96	395	1161	57	29	31	68	190	97	62	62	338	114	416	13	12076
'29	219	28	68	501	29	1211	44	113	1122	161	344	1668	93	32	97	68	244	153	57	74	533	84	613	22	16690
'28	202	13	14	163	12	385	9	47	454	45	187	740	10	8	93	22	51	78	21	34	322	18	313	13	7252
'27	15	3	12	39	1	64	4	19	94	8	53	155	3	2	7	5	5	5	4	5	75	5	43	4	1345
Before '27	29	7	6	30	6	78	11	23	96	14	68	264	11	3	14	6	11	14	9	4	94	7	59	5	2026
Unid.*	2		2	5		7	2		15			4	1			15	20			2	1		5		868
Total	1027	260	589	4352	145	12264	653	361	9818	878	3852	11204	654	265	352	832	2020	1246	328	1132	3547	589	3642	241	125789
HUDSON 6 Mo. '40	379	43	178	1991	145	4762	1122	100	5158	527	649	3559	200	715	101	612	2227	282	176	758	928	846	1997	178	62864
'39	295	46	309	1283	102	3711	1019	94	2895	500	415	3359	302	647	127	372	1609	257	146	576	704	346	1132	143	45798
'38	323	54	219	1261	131	3238	723	127	2239	405	586	2773	158	509	123	397	1820	174	140	462	886	325	1002	140	38002
'37	105	36	105	689	50	1915	195	36	1362	189	322	1268	98	98	31	157	740	102	108	169	552	126	379	60	18337
'36	132	47	131	667	57	2077	199	42	1555	218	398	1402	106	81	58	106	665	137	100	172	660	166	522	70	20387
'35	143	27	100	499	48	1613	212	42	1249	187	281	1269	109	69	71	134	429	97	87	183	458	110	431	72	16898
'34	146	21	132	684	28	1835	264	36	1053	175	208	1211	121	117	53	106	404	113	75	215	400	103	346	50	16504
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'32	36	6	25	237		735	41	8	285	43	49	369	51	16	8	23	53	19	25	43	73	22	142	7	4722
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'27	36	7	8	57	3	153	20	38	147	36	74	308	8	13	15	13	17	21	15	12	86	9	133	9	2760
Before '27	69	10	9	72	2	154	31	40	144	41	72	367	5	13	33	7	32	10	21	12	142	15	141	1	3272
Unid.*	1	1		2		16	2		15	2		12	3		2	20	25			3		4	6		1522
Total	2022	369	1416	9143	622	24336	4172	721	18622	2810	3808	19500	1357	2476	808	2093	8443	1519	1109	2886	5988	2235	7603	822	271206
HUPMOBILE 6 Mo. '40				66		16	3		14	2	4	20				1	3	1	2				3		207
'39		1	1	25		170		2	37	4	34	66	4			5	17	11		3	17	1	16	2	1058
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'37	3			6	1	19			28	1	2	13	3			2	3		1	1	15				282
'36	35	1	8	105	4	160	7	1	112	8	41	147	7	9	2	12	63	10	1	33	54	3	35	2	1830
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'34	27	5	15	201	9	647	45	11	385	22	36	388	22	51	12	19	118	15	13	58	47	10	181	1	4947
'33	19		19	269	3	923	10	5	239	22	24	391	65	30	3	10	66	6	12	54	24	6	54	1	4500
'32	38	4	21	375	3	1081	25	6	465	40	18	495	79	36	9	71	109	14	34	115	49	32	175	9	6410
'31	87	8	49	633	7	1626	39	11	697	85	96	967	129	73	37	132	187	38	70	157	321	43	209	28	11276
'30	126	10	44	535	9	1173	37	18	673	78	187	909	86	45	71	81	175	40	46	103	426	56	238	19	10456
'29	151	16	50	756	19	2096	80	38	1070	144	242	1369	121	48	79	114	305	88	58	177	424	62	336	23	15691
'28	145	14	38	533	15	1333	88	27	706	114	218	1256	75	37	93	39	208	58	35	139	343	42	263	21	11979
'27	56	4	13	152	10	366	15	23	329	31	103	457	18	8	35	21	69	28	14	46	200	14	90	6	4515
Before '27	101	12	6	106	9	262	28	86	316	54	195	700	16	14	109	19	87	29	8	49	236	18	120	9	5975
Unid.*				1		7	1		6		4	3	1			6	24			2			3		646
Total	874	82	292	4110	97	10688	435	236	5422	657	1344	7844	753	405	459	578	1683	382	313	1037	2327	310	1958	135	87465
LA SALLE 6 Mo. '40	47	42	37	938	15	2685	152	9	943	104	135	888	55	53	26	141	551	50	31	132	144	134	298	23	15492
'39	65	43	81	1136	40	3106	237	11	1162	191	193	1411	158	88	30	187	679	48	43	196	193	124	335	29	19905
'38	36	41	65	751	23	1949	144	13	664	128	84	998	120	48	22	103	514	40	43	130	144	66	176	16	13332
'37	78	66	77	1562	32	4126	239	24	1614	263	226	2022	224	74	24	224	731	61	89	202	350	146	418	23	27214
'36	33	23	32	660	14	1520	83	8	661	114	134	968	99	36	9	89	333	26	28	98	138	61	167	6	11732
'35	31	22	33	470	14	1017	75	5	494	88	66	757	62	24	6	67	225	32	26	78	93	55	164	4	8740
'34	18	5	14	309	8	716	52	6	294	40	42	381	31	14	4	31	142	20	14	43	64	26	94	3	4867
'33	1	5	7	245	1	570	8		169	19	11	213	40	5	2	13	38	6	9	13	17	2	50		2791
'32	9	5	7	223	3	445	17		120	18	10	211	44	7	3	14	35	2	7	12	27	6	38	2	2597
'31	13	8	15	438	7	858	25	2	234	45	35	395	71	14	5	13	66	12	17	21	42	11	61	3	4933
'30	18	6	18	347	7	728	24	7	188	56	61	473	45	16	6	30	58	13	18	24	81	10	57	6	5010
'29	27	9	17	308	6	657	36	7	175	69	73	596	51	16	6	29	58	19	28	27	105	11	58	2	5881
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Before '27																									
Unid.*		1	1	5		12			21			6	2	1		19	23	2				1	3		872
Total	407	281	417	7549	178	18749	1124	99	6850	1184	1148	9815	1024	410	153	972	3494	357	367	996	1491	660	1960	121	127692
LINCOLN 9 Mo. '40	108	54	44	647	48	1568	187	21	651	157	189	711	57	67	25	173	792	78	35	200	177	126	285	37	13844
'39	126	57	66	657	69	1876	257	34	863	257	207	1104	109	120	43	211	936	73	38	239	202	110	326	66	18071
'38	147	41	55	546	45	1574	249	44	647	233	214	1029	111	96	28	122	759	65	28	198	218	91	264	51	15489
'37	206	72	81	858	94	2640	339	54	1361	365	401	1536	168	131	60	210	981	132	44	289	430	145	516	86	24904
'36	104	35	50	507	54	1551	143	41	653	200	202	871	72	63	39	81	501	79	32	135	258	68	249	48	13461
'35	3	2	4	66		259	12	2	64	15	12	92	26	5		10	25	3	4	10	4	5	7		1434
'34	6	3	9	118	1	401	16	2	68	20	14	107	13	4	1	18	29	2		8	13	11	19	1	1821
'33	6	1	5	88	3	255	11		44	13	12	73	7		2	8	13	1	4	6	9	2	13		1256
'32	14	8	2	134	3	375	12	2	74	36	21	153	22	7	3	17	16	9	2	6	28	3	16	1	2070
'31	7	5	6	109		316	4	7	62	29	16	129	17	6		9	17	3	3	10	23	3	9	2	1628
'30	20	2	5	88	2	237	10		81	24	19	116	15	4	5	9	16	4	2	9	22	11	10	1	1582
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'27	1	2		20	1	38	4	1	14	4	6	56	2			1	6	1		4	11	3	9		527
Before '27	7		2	20	1	32	4	3	27	14	17	87	1	3	2	7	8	3	1	9	19	7	12		840
Unid.*		1		5		8			88	2		6		2	2	15	19		1		1	1	5	1	724
Total	775	289	331	3959	323	11404	1263	213	4785	1402	1368	6246	626	513	218	896	4139	465	196	1136	1469	593	1757	296	99826

Unid.*—Unidentified as to year of manufacture. All totals are as of July 1, 1940. Data from R. L. Polk & Co.

CARS IN USE BY MAKES, STATES,

Model	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.†	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
MERCURY																									
6 Mo. '40	533	175	336	3378	798	937	88	442	1180	1104	360	4717	1405	1146	719	562	876	253	309	1596	5536	1506	389	1348	338
'39	433	192	379	6372	754	870	109	550	1273	963	252	4407	1310	1176	807	497	840	285	528	1427	4642	1355	358	1568	356
'38																									
'37																									
'36																									
'35																									
'34																									
'33																									
'32																									
'31																									
'30																									
'29																									
'28																									
'27																									
Before '27																									
Unid.*	7	1	1	4	2	1		7	12	14	3	12	12	1	6	7	33	1	59	8	295		5	15	
Total	973	368	716	9754	1554	1808	197	999	2465	2081	615	9136	2727	2323	1532	1066	1749	539	896	3031	10473	2861	752	2931	694
NASH-Ajax-LaF																									
6 Mo. '40	315	183	170	1560	420	760	46	165	697	538	205	5063	1242	806	466	350	387	257	284	1341	2276	1207	138	1141	377
'39	300	188	158	3175	373	714	57	180	667	566	176	5070	1218	836	460	399	256	292	635	1788	1957	1132	165	1786	419
'38	167	141	142	2205	321	547	45	199	509	373	114	3051	621	746	430	284	212	187	341	1319	1204	1156	128	999	279
'37	318	298	209	4186	934	1427	83	144	629	632	346	8225	1826	1359	902	566	517	496	442	3148	3177	1836	175	1291	668
'36	255	263	91	3790	729	967	62	182	465	444	303	4229	934	1181	694	326	437	331	324	1982	1394	1151	162	874	597
'35	65	98	20	3947	242	400	36	86	233	131	79	1934	793	376	200	184	207	120	350	890	515	356	109	555	204
'34	102	86	38	1885	304	750	34	123	247	185	95	1867	519	452	297	213	323	307	281	1865	675	438	125	549	194
'33	20	14	12	890	89	202	10	28	61	28	17	505	112	84	73	50	78	87	97	587	131	97	28	165	24
'32	42	72	26	1478	176	640	28	153	214	143	56	1360	255	342	189	108	208	232	134	1397	476	467	56	409	75
'31	62	80	60	2442	213	425	30	74	170	123	97	1172	362	343	213	152	137	249	228	824	420	415	64	465	70
'30	62	123	49	2895	341	509	34	48	152	113	113	1432	432	524	361	165	162	253	217	758	501	582	101	522	93
'29	116	235	127	5087	667	887	66	77	318	174	249	3098	867	1412	958	303	214	386	259	1001	1117	1476	153	924	375
'28	67	107	48	4179	218	194	36	15	84	82	115	1125	532	507	376	159	86	91	160	212	343	450	123	479	125
'27	31	53	24	2459	145	158	22	13	47	59	82	563	302	306	188	85	34	77	86	113	250	335	46	243	78
Before '27	21	57	12	2240	146	92	20	10	64	39	77	515	274	218	123	71	38	61	85	91	208	345	44	213	51
Unid.*	2	3	2	11	8	5	2	48	20	36	5	77	2	3	14	4	72	3	913	8	710	7	5	67	
Total	1945	2001	1186	42429	5326	8677	611	1545	4577	3666	2129	39288	10291	9495	5944	3419	3368	3429	4836	17324	15354	11450	1622	10682	3629
OLDSMOBILE																									
6 Mo. '40	861	346	562	7067	1060	2565	407	1100	1810	1879	580	11598	4739	2061	1896	1498	1179	886	1193	7222	8893	2416	658	3534	694
'39	843	391	687	11491	1114	2196	452	841	1776	1822	412	9310	2975	2066	1632	1422	1164	753	1647	6861	6157	2090	646	3525	678
'38	555	292	302	9274	786	1499	335	573	1465	1108	317	6439	2486	1375	1105	965	850	614	965	4350	3551	1616	379	2533	432
'37	1079	630	521	18492	1904	3200	648	1261	2603	2083	649	14466	6164	2749	2273	1847	1289	1075	1715	8306	10900	3192	511	4194	762
'36	832	572	452	18388	1765	3230	648	1508	2444	1711	579	14454	5703	2875	2013	1702	1382	1135	1452	8583	9993	3203	362	4196	676
'35	642	413	348	14348	1147	2026	452	851	1397	1103	355	9536	4499	2189	1817	1193	733	670	1144	4855	6136	2490	279	3193	494
'34	443	233	196	5823	665	1344	221	404	809	752	192	5186	2111	1208	1059	679	424	404	560	2804	3595	1203	155	1995	251
'33	99	111	66	2156	190	737	98	189	234	180	68	2534	914	548	397	242	112	222	267	1435	1610	649	38	841	135
'32	48	58	29	1222	92	353	57	99	155	131	33	1148	498	265	176	120	86	140	131	869	868	433	34	465	42
'31	70	117	49	2202	291	781	112	167	282	248	77	2851	1356	868	414	270	94	336	199	1417	2203	1173	41	867	96
'30	78	117	44	2167	249	526	90	75	161	134	91	2020	1106	831	405	247	71	261	204	735	1606	768	36	798	82
'29	72	243	53	3863	477	437	128	55	215	136	161	2181	1561	1052	804	350	98	214	203	449	2341	1271	51	993	163
'28	37	125	31	2244	348	150	67	19	97	53	134	946	872	583	367	214	33	93	82	101	882	554	44	538	149
'27	22	35	19	661	149	47	22	2	36	31	70	341	363	178	138	81	14	44	47	30	342	246	17	210	86
Before '27	8	33	11	671	72	18	23	2	41	15	58	180	247	99	73	21	14	15	23	24	154	283	9	118	60
Unid.*	14		2	5	5	19	3	212	28	86	4	113	24	3	23	7	158	1	3255	41	2241	7	12	163	2
Total	5703	3716	3372	100074	10314	19128	3763	7358	13563	11472	3780	83303	35618	18950	14592	10858	7701	6863	13087	48082	61472	21594	3272	28163	4772
PACKARD																									
6 Mo. '40	395	274	227	2834	478	1976	133	610	1330	970	214	6017	1320	576	427	547	506	365	620	2763	3891	931	218	1142	220
'39	266	149	142	5758	285	1112	133	402	888	601	74	3640	653	316	237	388	336	212	1045	2018	1688	613	142	1106	121
'38	266	189	131	4900	350	1249	133	406	1072	673	73	4085	760	483	298	379	311	239	785	2147	1837	871	75	1071	189
'37	576	351	228	7848	779	3228	255	1162	2056	1442	198	8325	1813	1001	678	1125	579	563	1236	5504	5825	1643	203	2046	380
'36	223	163	98	6501	410	1569	155	627	1055	715	89	4496	1296	467	321	526	282	303	725	2985	2250	942	69	1219	180
'35	115	90	40	3502	211	777	81	300	508	320	42	2189	559	289	172	257	140	152	378	1559	985	512	41	606	95
'34	23	13	5	583	41	265	18	85	130	100	4	517	91	48	26	55	36	30	59	465	216	124	6	128	8
'33	10	7	1	761	40	164	16	48	76	52	4	346	111	26	19	49	19	22	79	330	126	77	10	86	2
'32	41	34	9	987	76	391	30	146	221	105	14	860	161	138	53	120	52	74	109	854	349	266	17	238	7
'31	23	25	5	1244	63	316	27	101	127	72	4	520	138	76	35	88	27	61	114	490	253	174	12	113	8
'30	42	63	17	2156	113	504	46	91	221	80	18	903	221	137	67	105	31	83	128	657	385	389	23	210	8
'29	38	76	7	2770	92	500	52	57	164	87	17	882	244	121	72	156	34	88	125	547	429	335	28	175	24
'28	30	53	12	2053	116	281	37	36	124	62	21	541	156	89	38	102	31	53	70	259	219	214	19	122	28
'27	16	36	2	1080	45	98	18	9	60	21	12	212	57	28	14	42	9	16	37	98	78	51	5	49	11
Before '27	15	33	9	1187	52	87	20	11	74	32	15	182	69	54	27	33	15	23	23	77	94	111	12	49	13
Unid.*	3		1	5	3	14	1	67	23	48		61	11	2	4	2	46		1214	15	823	2	3	53	
Total	2082	1556	934	44169	3154	12531	1155	4158	8129	5380	799	33776	7660	3851	2488	3974	2454	2284	6747	20768	19448	7255	883	8413	1292
PLYMOUTH																									
6 Mo. '40	2762	1058	1279	15670	1978	5753	525	3529	4954	4385	1221	24333	11277	5390	3549	3547	3288	1529	4558	11775	16943	7462	1595	7819	1226
'39	3766	1196	1943	22866	2791	6490	690	4105	6309	5163	1350	27707	9371	7462	4383	4372	4021	1740	5397	15057	17921	8895	2317	10356	1518
'38	1986	813	1320	22531	1869	3813	524	2377	4035	2688	821	16949	8888	5150	3497	3310	2969	1337	4015	8715	8064	6897	1442	7925	1060
'37	4198	2231	2645	33827	5156	8911	943	3641	7052	6492	2064	34850	16687	8945	7258	6586	4988	2478	5372	16265	28084	11905	2930	12409	2108
'36	3375	1863	2266	38548	5224	8451	944	3337	6701	5836	2137	34230	17460	9615	7291	6158	4156	2081	5557	15584	20743	11907	2763	11727	2476
'35	2723	1237	1647	31444	2988	5408	707	2064	4213	4413	1548	21632	13274	7804	5465	4559	2499	1483	4045	8968	12195	8453	1750	8243	2020
'34	2717	1228	1537	22182	2529	5101	566	1225	4206	4376	1149	16984	10118	5259	4615	4267	2467	1435	2963	8178	10147	5216	1721	7877	1257
'33	2037	671	1006	21108	2533	5442	502	804	3397	3404	750	16096	9113	4363	3791	4188	1447	1480	1973	8107	8216	5147	942	8548	954
'32	763	350	573	8240	1167	3197	236	313	2116	1023	342	7323	2247	2151	1450	1626	543	979	854	4568	4945	3752	275	3792	391
'31	312	161	142	5686	511	382	94	65	521	339	201	2027	2521	1042	614	876	241	337	623	646	1207	1376	117	1609	225
'30	281	146	395	2142	470	344	69	43	306	206	268	2022	1478	1496	759	762	173	389	275	568	1214	1933	122	1298	221
'29	394	196	221	2839	608	297	83	15	292	300	273	2360	1362	1467	1096	609	269	249	226	262	1667	2014	241	1311	488
'28																									
'27																									
Before '27																									
Unid.*	72	7	29	36	28	52	12	576	140	416	15	406	164	17	83	46	740	12	8608	97	5172	31	100	607	6
Total	25386	11155	15003	227119	27852	53621	5895	22094	44242	39041	12139	206919	105060	60161	43851	40906	27801	15529	44466	98790	136518	74988	16315	83521	13927
PONTIAC																									
6 Mo. '40	842	297	776	8815	1160	3780	494	2428	1624	1718	455	13807	4940	2354	1757	1595	1236	1207	1877	6186	12746	2801	644	3155	282
'39	911	259	741	12984	915	2881	499	1316	1596	1246	273	10664	2987	2482	1542	1422	1185	1049	2161	5773	8098	2429	773	3360	315
'38	611	243	427	9293	617	1483	345	774	1270	701	253	6898	2290	1686	1392	989	787	792	1212	3158	4634	1879	408	2275	244
'37	1277	588	861	18810	1749	4373	725	1530	2540	1864	645	18388	7351	3867	3161	2266	1117	1569	2350	8256	15831	4778	692	4809	652
'36	870	468	847	16360	1487	3433	572	1042	1965	1219	560	12185	5722	3057	2645	1723	1024	1129	1889	6170	10511	3556	577	4132	507
'35	667	439	582	10049	1293	2002	393	684	1565	1106	407	8692	4056	2453	1974	1175	752	704	1494	3741	7813	2771	459	2823	536
'34	346	225	193	3642	636	1716	205	471	1042	893	182	4953	1849	1271	1063	698	286	565	688	2909	3435	1025	266	1798	240
'33	387	199	159	4086	612	2199	231	557	968	755	142	5044	1690	1159	1220	650	180	575	844	3723	3803	1388	216	1937	313
'32	150	98	73	2127	320	990	111	187	426	319	62	1837	944	639	621	308	165	429	427	1892	1299	816	78	886	175
'31	224	103	149	3353	616	1651	184	163	798	444	124	3874	2011	1841	1143	618	252	710	695	2668	2672	1958	122	1716	248
'30	103	116	81	3002	402	886	127	80	318	197	165	2452	1034	1384	953	409	116	506	403	1055	1308	1639	70	956	121
'29	128	255	191	5323	688	746	193	32	337	211	264	3479	2194	1967	1540	544	209	339	330	704	2967	2783	122	1392	320
'28	105	145	129	3465	479	288	132	16	240	158	135	2101	1693	1403	1447	415	101	189	121	201	1968	1952	112	1209	240
'27	28	50	11	1055	116	81	38	1	69	51	45	548	536	322	393	93	26	51	44	25	729	573	29	291	83
Before '27	27	17	13	381	44	17	13		20	13	20	130	207	54	95	38	10	7	12	20	157	173	15	99	22
Unid.*	16	1	10	6	5	16	5	194	34	106	4	146	15	13	29	4	131		3873	35	2808	16	11	163	
Total	6692	3503	5243	102751	11139	26542	4267	9475	14812	11001	3736	95198	39519	25952	20975	12947	7577	9821	18420	46516	80779	30537	4594	31001	4298

Unid.*—Unidentified as to year of manufacture. †—Year of manufacture estimated. All totals are as of July 1, 1940

AND YEAR OF MANUFACTURE—*Continued*

Model	Neb.	Nev.	N. H.	N. J.	N. M.	N. Y.	N. C.	N. D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
MERCURY																									
6 Mo. '40	549	100	143	1895	275	5270	958	224	2965	975	632	2784	201	432	206	666	2336	277	105	881	577	465	1444	202	55193
'39	579	95	217	1779	244	5160	1045	261	3010	1209	551	3455	316	558	241	596	2473	200	118	901	559	398	1353	254	57275
'38																									
'37																									
'36																									
'35																									
'34																									
'33																									
'32																									
'31																									
'30																									
'29																									
'28																									
'27																									
Before '27																									
Unid.*	4			7	2	31			22	1		5		4	1	20	30		1			2	9		645
Total	1132	195	360	3681	521	10461	2003	485	5997	2185	1183	6244	517	994	448	1282	5439	477	224	1782	1136	865	2806	458	113113
NASH-Ajax-LaF																									
6 Mo. '40	272	46	81	1690	90	3417	330	124	3378	281	826	2670	172	170	186	450	1372	166	95	193	796	419	2999	107	40724
'39	297	84	232	1645	73	3728	359	183	2861	345	769	3311	396	213	206	477	1038	141	141	204	732	279	2786	129	43596
'38	296	61	162	1547	70	3236	333	141	1592	270	632	2595	193	123	168	348	858	139	111	282	529	164	2571	98	32239
'37	464	188	361	2763	118	5960	422	171	4968	507	1310	4836	510	166	288	772	1316	289	207	381	1262	439	7197	163	68892
'36	441	188	283	1487	81	4362	253	137	2737	372	1060	3591	331	76	254	496	963	350	152	304	940	381	2908	143	44457
'35	200	33	171	686	40	1711	127	113	1039	223	198	2141	128	21	104	188	296	178	50	172	167	124	2103	44	22387
'34	165	37	233	1357	27	3397	222	58	1361	199	224	1958	283	56	96	191	384	152	69	195	194	197	1363	46	24416
'33	35	5	69	377	7	1304	46	8	348	52	62	637	106	15	17	52	59	27	20	48	70	29	316	8	7206
'32	132	12	164	1484	25	3912	75	27	902	157	298	1635	206	34	45	98	199	74	97	153	339	109	695	27	19635
'31	166	17	146	1025	28	2645	81	59	800	175	219	1742	141	46	67	95	255	125	88	98	275	92	977	26	18278
'30	224	27	146	976	43	2677	88	101	993	206	308	1993	126	54	122	118	283	100	99	85	426	95	1118	37	20987
'29	657	47	239	1926	88	5096	203	341	2210	406	861	3913	186	122	294	252	743	218	256	158	1110	235	1972	98	42177
'28	351	20	70	472	35	1193	64	206	809	216	342	2091	45	67	232	91	250	99	51	113	471	40	1363	26	18630
'27	160	14	30	286	24	700	35	143	598	117	297	1279	18	29	99	33	121	72	27	37	363	33	705	27	11046
Before '27	142	9	18	171	13	527	30	135	456	105	191	1134	18	23	143	32	115	59	26	35	300	29	582	19	9427
Unid.*	1		4	7		27	4		48	1		30	4	2	10	75	73			2		2	22	4	2343
Total	4003	788	2409	17899	762	43892	2672	1947	25100	3632	7597	35556	2863	1217	2331	3768	8325	2189	1489	2460	7974	2667	29677	1002	426442
OLDSMOBILE																									
6 Mo. '40	682	125	390	6581	482	18048	1801	262	9418	1504	1565	9250	656	796	442	1431	6417	578	450	1615	2024	1564	3936	276	136997
'39	841	142	711	5346	454	15605	1712	324	7242	1672	1187	10279	1027	699	490	1413	5522	480	472	1421	2018	934	3031	328	126301
'38	565	146	446	3993	257	11489	1147	217	4621	1247	829	7617	701	392	244	875	4299	299	281	901	1600	651	2217	173	89373
'37	1186	200	847	7945	479	20320	1822	333	11739	2411	1720	14735	1606	781	456	1739	7284	653	433	1726	3555	1424	5379	403	181689
'36	1317	215	909	8696	347	21139	1639	261	12931	2409	1755	14729	1610	613	527	1394	6650	735	492	1803	3364	1447	5375	402	180607
'35	959	148	507	5156	288	12006	1299	309	7779	1670	902	10278	862	566	469	903	3543	503	329	1052	1865	875	3498	265	118341
'34	559	83	279	3078	165	7962	678	174	4458	821	481	5049	537	324	224	550	1901	216	171	547	1289	530	1889	139	64820
'33	259	21	140	1872	49	4789	179	77	1841	355	186	2229	260	96	112	160	450	116	92	263	540	203	906	44	29311
'32	136	16	79	1117	18	2775	102	37	919	204	126	1283	127	56	64	104	192	34	75	112	257	83	433	33	15934
'31	309	18	212	2147	33	5362	222	78	2430	416	305	2569	225	125	260	192	347	93	139	254	619	175	1154	71	34346
'30	379	19	124	1368	51	3493	105	110	2051	332	336	2055	162	65	302	149	311	105	77	146	623	152	1222	55	26694
'29	715	48	110	944	84	2961	174	238	3002	473	631	2914	117	112	444	186	545	182	106	141	1145	180	1543	100	34666
'28	416	19	38	297	40	1079	130	239	1375	245	434	1535	19	45	346	84	294	183	40	91	646	94	769	52	17279
'27	124	7	13	74	18	242	51	106	569	72	201	514	3	20	119	32	93	66	15	32	309	25	356	31	6293
Before '27	97	7	7	52	13	166	20	165	286	70	172	507	4	5	123	27	62	68	10	17	233	25	256	4	4668
Unid.*	2		2	9	2	72	4	1	97	6	2	83	4	2	8	105	79		1	5		11	33	1	6957
Total	8546	1214	4814	49675	2780	127508	11085	2931	70758	13907	10832	85626	7920	4697	4630	9344	37989	4311	3173	10126	20087	8373	31997	2377	1074270
PACKARD																									
6 Mo. '40	270	144	148	3461	94	8569	754	52	3916	408	611	4614	200	414	59	763	2511	291	313	925	933	782	1141	96	60453
'39	204	73	273	2169	78	5265	520	29	2106	397	283	4570	408	355	58	491	1476	115	130	538	532	362	813	80	43650
'38	286	89	156	2568	126	6621	537	38	2339	390	378	4570	351	346	72	445	1642	158	172	600	510	362	840	87	46655
'37	440	168	394	5684	194	13368	1253	58	6538	769	813	8767	886	779	151	1019	3270	341	298	1384	1496	921	1869	148	100072
'36	284	83	223	2839	131	7250	523	31	3303	483	477	5374	418	321	97	462	1390	229	143	713	674	395	1380	50	54939
'35	148	31	111	1527	46	3843	264	14	1455	240	194	2781	201	126	48	225	634	107	82	326	316	163	631	23	27456
'34	11	6	15	491	2	1192	34		307	46	34	593	41	23	1	41	103	19	17	73	39	42	89	5	6300
'33	23	7	15	313	4	765	30		280	35	26	512	33	15	8	30	79	22	5	43	41	122	82	2	4973
'32	28	17	33	938	15	1934	61	6	650	79	63	1037	80	38	3	78	145	47	39	127	109	66	172	8	11125
'31	37	12	27	639	10	1181	49	4	424	71	56	956	69	27	9	53	96	29	22	88	121	27	127	1	8251
'30	84	14	27	933	31	1773	70	16	701	131	183	1591	88	42	26	56	134	45	40	80	279	34	195	7	13278
'29	61	23	40	783	23	1454	88	25	548	148	185	1787	90	61	30	68	113	75	42	74	306	40	190	6	13380
'28	64	16	21	526	19	790	79	14	370	102	128	1272	42	43	15	59	103	59	35	44	247	25	124	11	8972
'27	26	6	9	169	9	279	28	11	135	46	80	591	15	17	12	19	48	23	9	23	124	10	49	6	3848
Before '27	59	9	8	143	17	225	16	11	161	50	113	669	18	19	20	23	48	31	13	23	188	17	69	1	4268
Unid.*		1	2	5	1	22	1		65	2	4	32	1	1	2	41	106			1		1	8		2697
Total	2025	699	1502	23188	800	54531	4307	309	23298	3397	3628	39736	2941	2627	611	3873	11898	1591	1360	5062	5915	3369	7779	531	410317
PLYMOUTH																									
6 Mo. '40	1946	369	806	11694	661	32866	4418	845	23868	3259	3380	22970	1355	1886	935	3926	11944	1162	736	5257	3873	4163	7068	499	297291
'39	2852	427	1349	13363	1030	41003	6575	1091	25654	4276	3138	30198	2837	3532	1337	4825	16188	1236	877	6558	4808	3483	7958	781	362562
'38	2245	274	975	9213	879	27199	4185	806	13017	3260	1902	22970	1580	1748	1001	3259	11894	741	661	4207	3289	2242	5808	591	246941
'37	4067	643	1667	17115	1515	44160	7919	1234	35665	5870	5492	41299	3714	3954	1604	6908	21314	1911	1191	7057	8814	5292	11647	1159	479236
'36	4997	668	1699	16164	1466	41813	7311	1154	34805	5855	5129	41296	3738	3442	1824	5922	18599	2199	1237	7247	8328	5587	11197	1205	463312
'35	3645	404	1150	10175	1076	24701	6069	1307	22539	4401	3491	30973	2719	2494	1626	4825	12931	1455	880	4855	5417	3634	8714	822	321085
'34	2567	261	949	9361	819	23108	6466	796	21726	3509	2907	24772	2467	2612	947	4390	11786	1171	702	4256	4481	3344	6036	567	269318
'33	2326	201	955	9347	522	24927	4508	748	19677	3115	2427	21936	2399	2245	669	3117	8794	1024	584	3092	3953	2375	5389	440	240789
'32	928	92	769	5777	169	17306	1384	266	9119	1457	1242	10327	1387	534	471	1170	2163	257	484	1043	2142	978	2604	232	116617
'31	676	36	176	1074	91	2879	400	193	2561	584	352	4128	189	188	215	377	941	72	175	668	876	423	1588	125	40842
'30	903	32	143	659	102	2251	335	288	2448	433	564	3098	148	155	429	394	975	103	175	315	945	326	1520	90	34211
'29	1175	36	114	611	140	1821	371	569	2306	506	853	3612	118	227	560	349	1231	198	186	346	1673	206	1797	117	38238
'28																									
'27																									
Before '27																									
Unid.*	36	2	14	54	8	234	23	9	398	54	14	503	16	12	25	552	351	9	10	28	8	41	127	8	20008
Total	28363	3445	10766	104607	8478	284268	49964	9306	213783	36579	30891	258082	22667	23029	11643	40014	119111	11538	7898	44929	48607	32094	71453	6636	2930450
PONTIAC																									
6 Mo. '40	965	180	399	9927	363	20545	2517	220	12096	2225	2156	10956	666	783	235	1405	5037	664	498	2440	2028	1511	3790	185	158767
'39	876	121	712	7679	321	17345	2069	222	8887	2245	1257	11045	1041	970	274	1263	4107	368	373	2018	1696	826	2988	152	136716
'38	631	112	435	5085	193	11226	1402	185	5313	1542	924	7647	549	533	206	850	3438	266	231	1145	1159	562	2216	111	90622
'37	1577	281	785	10553	445	22632	2442	370	17239	3262	2421	16050	1390	1099	529	1542	6248	695	557	2473	3420	1481	5857	358	213755
'36	1393	224	668	7615	337	16350	1513	276	12536	2577	1909	12654	1084	672	479	1433	5273	475	420	1904	2447	1227	4504	343	161963
'35	1173	101	403	4880	338	11296	1528	340	8153	1748	997	8681	770	685	473	995	4374	426	328	1376	1385	688	3417	284	113469
'34	594	50	296	3623	155	7854	1093	159	3461	922	468	4536	637	457	214	542	2522	186	225	851	747	392	1778	116	62475
'33	555	51	375	4796	157	11160	1044	216	3555	1031	448	5098	873	425	186	418	2183	203	248	972	772	417	1780	126	70124
'32	342	20	249	2036	59	5037	309	70	2073	487	196	2453	459	152	68	155	708	90	184	524	395	218	922	47	32632
'31	687	21	401	2491	96	6601	677	222	4086	819	530	4063	740	311	234	332	1072	165	199	870	865	442	2039	88	56388
'30	502	15	240	1196	59	3499	297	206	2563	561	523	2832	300	97	195	228	712	146	146	449	668	245	1545	52	35159
'29	1264	24	155	974	93	3273	346	483	3890	858	995	4246	222	200	483	245	1238	226	99	411	1196	210	2557	81	51027
'28	1297	18	105	509	85	1627	282	641	2197	590	800	2924	79	160	609	179	814	113	85	289	996	98	2191	50	35182
'27	302	8	40	151	23	405	86	188	688	164	314	843	14	37	162	28	181	32	34	70	387	31	576	15	10047
Before '27	71	4	4	52	7	96	16	63	161	41	105	280	1	12	44	14	53	10	6	26	139	7	195	3	3014
Unid.*	7		5	12	2	71	6		90	9		90	4	2	7	131	109		1	11	1	1	45	2	8247
Total	12236	1230	5272	61579	2733	139017	15627	3861	86988	19081	14043	94398	8829	6595	4398	9760	38049	4065	3632	15829	18301	8356	36400	2013	1239587

Unid.*—Unidentified as to year of manufacture. All totals are as of July 1, 1940.

Data from R. L. Polk & Co.

CARS IN USE BY MAKES, STATES

Model	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.†	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
STUDEBAKER																									
6 Mo. '40	792	305	454	5098	637	1088	114	652	1239	1005	589	6224	3397	1576	731	651	1048	257	850	1750	2665	2086	441	1745	550
'39	294	239	315	10401	574	1064	146	701	1219	965	439	5930	3348	1442	783	610	700	318	1084	2220	2237	1801	359	2004	572
'38	133	144	89	5885	299	691	80	437	494	416	219	3022	1751	799	462	299	412	200	428	1123	785	1019	57	716	238
'37	345	287	252	7614	768	1592	131	629	873	904	552	6283	3892	1589	986	734	598	417	648	2627	2112	1995	135	1429	461
'36	226	246	127	8821	495	951	108	382	478	527	390	3887	2925	1104	688	448	406	257	608	1541	1093	1251	82	1137	356
'35	138	190	104	5046	336	625	69	280	376	474	249	2499	1726	882	638	322	306	206	439	1080	837	953	64	806	338
'34	248	227	126	5106	415	903	81	339	521	513	233	2738	1464	1030	867	438	269	306	364	1723	1179	1131	91	1021	261
'33	86	85	33	4253	176	550	48	139	191	231	44	1105	904	282	289	261	98	137	297	789	492	496	30	419	103
'32	118	119	47	4734	285	738	63	161	266	283	67	1619	1076	410	385	370	179	272	255	1188	933	788	60	575	84
'31	120	132	44	4645	422	713	67	141	287	301	121	1701	876	691	393	306	156	305	230	1063	833	972	45	485	110
'30	92	167	50	4815	278	690	59	80	188	164	139	1645	824	634	377	272	97	258	210	713	827	875	61	406	85
'29	76	265	47	5880	306	499	66	46	170	132	112	1531	1040	509	391	277	73	133	168	485	902	711	50	403	126
'28	54	188	34	5106	248	370	53	21	110	91	96	823	657	409	313	157	48	125	101	229	543	527	53	286	86
'27	25	110	8	3258	149	130	33	7	74	54	51	416	345	200	148	99	24	69	74	80	246	349	21	135	47
Before '27	38	131	21	4326	182	152	44	10	151	59	71	515	419	350	213	101	17	90	75	74	304	609	40	199	60
Unid.*	9	2	4	19	4	8	1	101	14	74	3	52	19	6	12	5	96		1528	15	705	12	4	84	1
Total	2794	2837	1749	85007	5574	10764	1163	4126	6681	6193	3375	39990	25163	11913	7658	5350	4527	3350	7359	16700	16693	15575	1593	11850	3478
TERRA-ESSEX																									
6 Mo. '40																									
'39																									
'38																									
'37	1127	313	205	3582	1188	1184	144	376	1495	1105	553	5286	2796	1639	1801	870	588	549	689	2248	7357	1797	281	1304	505
'36	788	282	242	3892	1071	944	136	345	1258	817	494	4902	3396	1762	1520	783	382	535	619	2447	6334	1857	284	1247	837
'35	384	181	106	2885	511	597	84	215	607	383	282	2612	2387	1163	1073	443	199	266	395	1237	3301	1182	162	722	505
'34	362	152	87	1851	350	791	70	170	639	473	140	2100	1144	853	737	343	168	487	242	2019	2468	691	93	567	208
'33	174	89	34	1752	240	750	52	126	388	259	51	1354	818	575	538	249	91	393	253	1737	2235	404	42	460	108
'32	64	72	23	1365	213	471	37	77	300	116	37	786	635	370	325	253	63	306	196	1187	1135	323	25	424	42
'31	60	42	23	1209	282	585	44	72	396	142	40	1035	891	663	442	312	90	574	225	1399	1389	536	27	519	60
'30	56	70	46	1907	293	528	51	41	349	70	88	967	762	699	376	321	67	470	218	786	921	932	25	471	90
'29	108	121	60	4338	599	550	88	61	440	129	144	2052	2147	1070	855	661	134	497	349	757	2822	1015	69	1018	212
'28	50	63	22	1817	223	144	35	22	194	77	78	713	787	432	404	255	51	158	101	155	797	478	36	393	94
'27	53	26	20	998	81	67	18	7	75	35	36	286	444	202	166	112	22	84	65	58	349	306	20	197	49
Before '27	22	13	6	588	55	41	11	1	58	27	27	197	223	133	113	54	15	36	21	20	203	173	12	103	16
Unid.*	10	7	1	10	5	4	1	75	15	53	2	33	7	1	20		77	1	1145	12	1304	12	4	39	1
Total	3258	1431	875	25194	5091	6656	771	1588	6214	3687	1972	22323	16437	9562	8370	4656	1947	4356	4518	14092	30613	9706	1080	7464	2727
WILLYS																									
6 Mo. '40	217	35	86	1500	109	217	19	33	448	233	100	859	518	248	143	146	326	129	148	374	723	185	79	179	64
'39	125	42	16	2408	96	159	19	91	414	69	48	428	430	125	79	113	113	130	217	257	297	235	39	203	30
'38	143	61	41	1870	76	158	19	68	503	180	63	781	445	259	228	171	285	69	213	297	475	334	67	335	47
'37	466	210	153	9152	548	848	75	172	1055	493	180	2706	2244	728	500	612	355	241	396	1092	2139	930	119	1085	207
'36	141	107	31	4638	122	125	30	10	517	242	97	225	354	112	29	92	97	25	23	85	346	80	35	50	36
'35	113	65	23	4476	19	52	27	10	255	151	55	97	241	40	17	65	86	11	9	32	111	28	30	37	38
'34	94	35	32	2144	18	48	15	5	418	253	21	72	108	32	18	55	109	19	12	42	120	8	21	36	5
'33	77	32	3	2107	92	157	18	42	468	146	22	541	373	166	132	210	59	49	106	263	273	257	28	261	20
'32	53	29	12	729	99	154	11	28	118	117	25	779	527	318	290	232	53	73	133	341	406	422	24	421	43
'31	52	52	36	1484	323	210	19	32	170	90	83	1059	873	742	427	427	50	156	159	364	422	889	22	801	81
'30	75	71	70	1308	351	145	19	10	163	94	97	1037	673	881	560	371	51	148	116	252	569	944	61	1039	123
'29	219	175	174	2011	460	239	31	15	275	208	192	1629	1412	1488	1114	697	92	176	148	262	1401	1647	85	1576	206
'28	219	144	147	1441	382	137	26	9	187	191	175	1193	1278	1418	1208	496	73	121	153	135	993	1203	102	1317	263
'27	45	35	37	734	104	81	10	3	48	34	79	446	523	440	261	119	29	86	65	63	331	462	30	331	72
Before '27	39	65	45	877	91	46	11	3	122	48	82	447	442	322	246	88	28	31	71	29	373	564	27	276	74
Unid.*	8	2	1	6	6	3		30	17	24	1	26	11	4	9	1	52	1	596	2	558	26	2	68	1
Total	2086	1160	907	36885	2893	2779	349	561	5178	2573	1320	12325	10462	7323	5261	3895	1858	1465	2565	3890	9537	8214	771	8015	1310
W-KNIGHT																									
5 Mo. '40																									
'39																									
'38																									
'37																									
'36																									
'35																									
'34																									
'33				25	12	4		5	3		1	16	8	4	5	5			1	9	26	25	1	12	
'32		3	3	328	18	33		4	11	5	2	134	25	34	21	13	4	11	10	40	42	95	1	30	7
'31	3	8	1	515	45	53	1	10	32	4	7	205	95	65	42	12	6	25	15	79	58	208	1	47	15
'30	9	24	7	864	58	130	3	10	25	17	13	337	92	90	80	20	11	52	17	106	58	253	5	75	21
'29	9	49	9	2054	93	150	6	11	38	17	20	427	214	161	102	13	7	56	46	107	101	340	1	92	38
'28	11	37	4	1279	84	91	12	9	25	23	23	344	177	196	100	12	2	51	32	64	48	223	2	72	50
'27	6	17	3	1279	39	81	9	5	19	14	18	262	112	69	36	5	1	40	30	42	35	165	2	39	19
Before '27	6	18	6	1135	55	41	6	9	44	14	23	290	149	125	54	9	1	29	24	21	51	252	2	44	17
Unid.*	1			8	5		6	5	1	3		9	1	1	2	1	1	1	91	3	91	4		7	3
Total	45	156	33	7487	409	583	43	68	198	97	107	2024	873	745	442	90	33	265	266	471	510	1565	15	418	170
MISC.																									
6 Mo. '40	29	4	13	156	31	26	2	34	115	78	6	74	70	11	23	12	19	2	25	100	98	89	10	70	1
'39	35	12	36	260	11	61	4	26	197	149	9	167	152	67	45	51	56	13	44	210	156	58	36	127	5
'38	16	13	11	305	16	30	2	22	165	106	7	67	50	18	34	20	23	4	29	98	86	13	12	77	1
'37	22	13	17	637	50	61	6	32	191	119	11	222	87	22	68	14	58	2	58	167	187	33	12	115	11
'36	33	18	27	986	112	221	11	45	217	138	28	745	326	104	118	80	67	17	58	492	605	292	8	252	30
'35	74	22	17	1059	142	319	12	67	341	200	22	863	475	109	166	85	81	40	51	570	589	252	10	212	29
'34	85	20	26	1293	98	260	12	60	331	269	13	623	363	81	124	67	71	47	80	529	448	165	30	229	16
'33	113	25	41	1690	116	375	18	59	701	250	14	944	458	170	111	219	73	60	66	552	600	188	25	330	60
'32	96	35	32	2226	122	349	19	97	686	217	34	780	354	125	98	175	90	69	174	679	652	224	42	349	32
'31	74	126	57	6069	554	1002	48	139	471	252	124	1743	760	484	371	353	80	267	308	1463	1297	723	46	797	138
'30	161	230	122	7672	784	1372	68	123	580	328	292	2508	1208	1343	865	509	123	434	411	1457	1839	1370	108	1043	266
'29	111	335	123	9092	676	1310	77	131	431	292	356	3167	1398	1190	840	572	132	409	356	1269	2347	1686	79	1305	413
'28	98	183	105	6506	500	555	51	59	258	137	241	1762	1005	889	697	363	76	247	190	523	1058	1162	81	982	282
'27	44	101	69	4068	341	358	31	32	168	81	151	1060	567	552	402	158	53	134	155	277	621	659	33	500	174
Berore '27	54	151	92	6684	449	335	47	29	356	120	169	1382	671	680	536	205	37	126	155	272	692	1096	52	529	205
Unid.*	298	15	31	99	299	15	3	88	353	93	114	2714	115	122	23	594	101	56	1168	563	2217	48	241	551	18
Total	1343	1303	819	48802	4301	6649	411	1043	5561	2829	1601	18821	8059	5967	4521	3477	1140	1927	3328	9221	13492	8058	825	7468	1661

Unid.*—Unidentified as to year of manufacture. †—Year of manufacture estimated. All totals are as of July 1, 1940.

U. S. SUMMARY—BY MAKES AND

	July 1 Total	6 mo. 1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	Prior to 1927	Year not given
Buick	1,422,060	201,031	192,401	151,690	196,987	150,464	53,470	55,752	37,892	42,368	74,895	63,205	56,581	52,712	42,249	41,520	8,843
Cadillac	90,526	8,566	11,726	8,499	11,503	10,928	3,984	4,120	2,492	3,491	8,285	4,940	4,114	3,027	1,584	2,633	634
Chevrolet	6,460,474	557,013	560,946	451,381	777,380	884,320	540,503	495,851	422,016	264,111	471,537	340,581	323,304	204,143	74,272	50,667	42,444
Chrysler	578,893	61,604	62,108	43,220	88,003	50,227	33,335	25,490	22,938	22,047	33,923	34,256	33,232	30,397	19,799	14,540	3,774
De Soto	377,905	42,569	50,814	33,310	72,078	39,635	23,625	10,226	18,975	21,160	18,587	18,415	26,019				2,492
Dodge	1,500,118	134,749	175,946	100,091	258,795	237,160	145,603	77,030	80,832	24,394	35,982	38,703	58,892	52,046	22,406	47,509	9,980
Ford	6,686,385	385,547	420,545	326,487	762,413	744,394	672,047	470,640	219,914	193,588	492,908	695,196	784,214	224,221	49,657	193,809	50,805
Graham-G.P.-Jewett	125,789	911	3,873	3,710	14,264	14,030	15,493	9,320	8,136	6,902	8,893	12,076	16,690	7,252	1,345	2,026	862
Hudson	271,206	62,864	45,799	38,002	18,337	20,387	16,898	16,504	2,088	4,722	10,264	10,770	12,364	4,653	2,760	3,272	1,528
Hupmobile	87,465	207	1,058	1,325	282	1,830	6,368	4,947	4,500	6,410	11,276	10,456	15,691	11,979	4,515	5,975	646
La Salle	127,692	15,492	19,905	13,332	27,214	11,732	8,740	4,967	2,791	2,597	4,933	5,010	5,881	3,181	1,045		872
Lincoln	99,826	13,844	18,071	15,489	24,904	13,461	1,434	1,821	1,256	2,070	1,628	1,582	1,428	747	527	840	724
Mercury	113,113	55,193	57,275														645

AND YEAR OF MANUFACTURE—*Concluded*

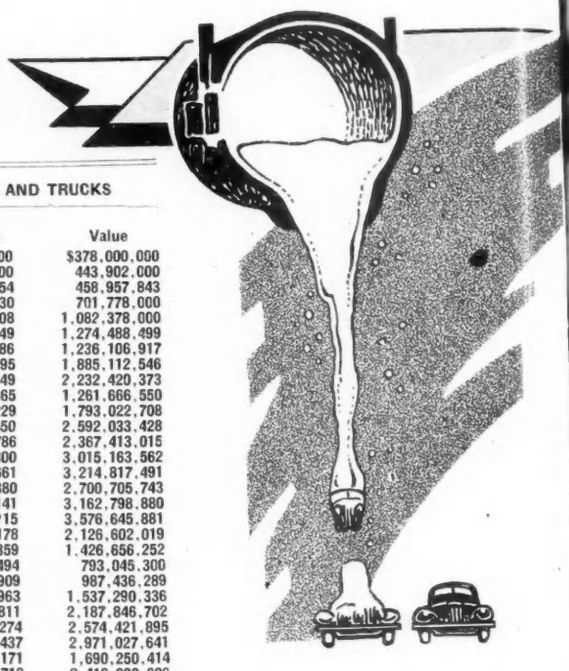
Model	Neb.	Nev.	N. H.	N. J.	N. M.	N. Y.	N. C.	N. D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
STUDEBAKER 6 Mo. '40	522	139	140	2501	181	5550	1021	197	5339	542	1108	4524	219	475	259	1137	2991	596	109	889	1466	1191	1886	182	69638
'39	568	143	274	2435	202	5809	837	194	4716	714	941	5875	689	575	221	1087	2876	610	153	811	1552	916	1993	172	74128
'38	339	68	163	1458	94	3085	223	102	1948	375	550	3143	318	159	119	377	1926	302	88	396	951	384	865	85	37716
'37	575	155	280	3262	187	6802	423	164	5559	621	1264	5220	592	388	238	724	3640	619	137	571	2008	789	2101	165	74337
'36	538	114	228	1707	120	3622	230	113	2991	518	966	4335	219	199	174	443	2032	401	66	398	1745	436	1559	158	51840
'35	407	52	119	1169	77	2487	265	113	2068	331	523	2769	118	140	180	303	1561	226	44	304	1075	257	923	81	34575
'34	456	58	212	1819	100	4594	423	156	2661	378	516	3191	233	267	203	355	1678	186	63	434	1047	278	937	61	41898
'33	214	22	111	870	43	2520	152	40	1278	212	144	1894	139	58	75	134	669	48	36	235	402	103	453	36	21426
'32	268	40	181	1640	32	4685	137	65	1555	291	277	2496	217	101	131	174	647	80	63	228	638	132	745	36	29914
'31	466	63	145	1608	44	4343	159	71	1499	315	511	2634	217	93	176	250	725	91	73	200	954	146	894	74	30910
'30	487	42	137	1003	34	2844	110	92	1420	274	578	2355	131	83	171	214	553	126	67	141	900	135	904	49	26856
'29	477	41	90	845	86	2263	125	134	1428	309	517	2588	130	54	168	140	583	137	73	155	899	119	933	46	26738
'28	391	34	72	528	39	1418	81	110	798	241	457	2082	64	69	160	85	368	81	62	95	776	76	681	45	19541
'27	220	15	37	264	26	613	42	60	453	143	316	1290	34	27	98	51	136	69	33	37	550	52	365	16	11099
Before '27	282	16	27	206	22	524	73	214	667	199	455	1750	37	48	154	30	223	62	39	60	662	57	399	27	14484
Unid.*	5	1	1	9		30	8	1	57	2	1	43		2	4	62	92	3	2	1		4	13		3119
Total	6215	1003	2217	21324	1287	51189	4309	1826	34437	5465	9124	46189	3357	2738	2531	5566	20700	3637	1108	4955	15625	5073	15651	1233	568219
TERRA-ESSEX 6 Mo. '40																									
'39																									
'38																									
'37	532	73	305	2263	263	5415	1263	221	6874	648	1069	5213	345	987	199	833	2872	430	212	835	2068	716	2042	282	74942
'36	553	93	291	1667	221	4688	838	213	6079	605	1292	4963	469	654	297	714	2669	478	256	738	2228	645	2017	272	70114
'35	359	26	203	969	107	3008	621	106	3525	379	668	3074	186	401	243	450	1316	182	151	497	1181	323	1187	186	41280
'34	357	34	267	1142	56	3433	813	65	2621	303	340	2534	276	359	169	385	977	195	161	530	672	345	835	124	34196
'33	178	6	265	952	30	3318	492	34	1905	234	222	1917	276	238	49	217	443	98	169	360	511	230	624	67	26007
'32	101	9	136	908	12	2417	232	26	1340	163	126	1381	188	101	38	131	214	88	140	210	193	127	604	50	17780
'31	164	10	224	1016	23	3007	261	33	1681	189	173	1607	204	101	67	171	221	98	205	218	269	133	683	46	21841
'30	156	21	130	748	29	2387	180	75	1625	224	484	1859	95	55	118	140	192	124	141	140	608	183	710	43	21041
'29	442	40	207	1067	51	2871	350	219	3251	397	711	3213	159	153	267	270	464	311	255	296	1269	215	1597	55	38426
'28	208	18	72	219	21	857	147	155	1111	150	367	1293	24	63	152	93	214	94	62	107	511	66	737	20	14340
'27	96	6	41	100	6	388	67	68	446	69	147	670	11	34	54	40	86	41	38	43	252	31	444	7	6982
Before '27	72	4	14	56	4	180	37	41	266	32	97	390	6	15	52	14	60	18	22	19	141	14	178	3	3903
Unid.*	3		2	3		22	9		41	2	1	51	2	3	2	55	57	2	2			5	16		3117
Total	3221	340	2157	11110	823	31991	5310	1276	30765	3395	5677	28165	2241	3174	1707	3513	9785	2159	1814	3993	9903	3033	11674	1155	373969
WILLYS 6 Mo. '40	35	16	50	553	17	1249	271	36	1445	154	427	863	57	101	39	395	486	64	43	117	242	285	292	35	14370
'39	52	12	69	378	12	1004	140	35	1085	145	170	828	19	51	40	134	270	51	26	137	125	146	216	17	11345
'38	111	21	60	508	38	1450	203	58	873	155	217	862	43	91	39	134	496	46	47	244	192	136	289	37	13538
'37	382	64	195	1599	135	3393	647	96	5136	582	811	3340	136	439	130	540	1271	165	140	521	1265	585	1047	124	49449
'36	78	28	56	163	24	361	48	33	1067	238	753	1370	6	112	15	312	307	64	17	41	1033	62	47	23	13907
'35	29	8	12	81	15	143	74	9	495	202	366	1156	8	94	6	198	179	28	1	42	447	30	37	3	9751
'34	18	13	5	77	6	259	81	4	381	111	263	670	12	111	3	203	175	10	4	30	216	21	13	4	6430
'33	26	9	29	540	8	1625	95	24	1192	135	99	781	79	154	15	113	175	28	21	63	203	93	182	8	11599
'32	89	2	55	442	14	1720	75	70	1180	80	119	494	63	38	20	135	179	11	83	134	123	119	570	16	11268
'31	244	5	106	481	21	2184	99	168	1747	145	148	846	71	32	148	130	259	40	101	130	372	225	704	36	17465
'30	413	17	72	356	26	1575	92	250	1656	140	221	825	53	29	241	152	392	38	111	122	537	156	869	35	17606
'29	1129	20	91	432	68	1980	208	547	3071	251	513	1408	57	116	551	276	1150	107	155	245	740	223	1334	41	30645
'28	1380	18	70	303	35	1419	245	642	2110	206	652	1208	35	147	550	200	956	68	116	214	810	175	1163	67	25800
'27	402	7	30	157	16	650	47	262	866	68	220	465	12	27	174	45	197	27	57	68	342	51	580	16	9261
Before '27	292	4	16	75	11	385	24	263	724	76	256	496	5	15	182	39	248	30	32	45	257	34	480	6	8442
Unid.*	3		1	3		14	6		100	2		20		1	3	52	119	1	1	3	1	8	14	1	1806
Total	4683	244	917	6148	446	19411	2355	2497	23128	2690	5235	15632	656	1558	2156	3058	6839	778	955	2156	6905	2349	7837	469	252684
W-KNIGHT 6 Mo. '40																									
'39																									
'38																									
'37																									
'36																									
'35																									
'34																									
'33	40			44		106	1	1	20		4	18	5			2	1	2		2	7		2		417
'32	138	1	5	134	1	262	10	12	131	2	50	150	13		2	1	11	2	7	8	41	14	17		1987
'31	335	5	10	244	4	453	6	15	219	5	42	249	28	4	5	5	8	13	11	13	105	13	24	4	3374
'30	226	1	8	280	9	541	15	25	385	10	140	390	51	6	10	5	25	6	15	36	246	37	24	3	4874
'29	128	11	11	286	13	565	27	61	597	62	210	736	47	8	38	8	42	33	26	40	385	49	67	12	7629
'28	120	7	19	237	12	425	35	71	430	28	225	526	39	15	32	2	28	35	17	23	414	30	53	9	5800
'27	79	2	7	168	7	298	15	36	288	18	127	438	20	7	16	2	15	31	12	21	270	20	39	7	4287
Before '27	69	6	4	106	5	233	14	68	262	9	177	414	7	2	29	3	5	30	10	15	266	16	73	5	4253
Unid.*	11	1		5		29	1		18			2			2		4		1	1		2	1	9	325
Total	1146	34	64	1504	51	2912	124	289	2350	134	975	2923	210	42	134	28	139	152	99	159	1734	181	300	49	32846
MISC. 6 Mo. '40	14		3	20	2	1564	12	1	61	7	16	95	13	10	4	29	335	1	6	20	42	14	39	3	3409
'39	14	2	16	87	6	691	49	5	159	18	37	176	24	31	6	48	329	5	7	45	49	26	86	3	3906
'38	6	1	4	44	1	423	17	3	56	9	12	114	18	22	3	34	163	1	3	27	40	7	35		2268
'37	15	4	6	144	1	617	15	4	95	30	28	234	23	20	2	31	227	15	3	39	63	20	78	5	3934
'36	51	11	31	458	10	6283	29	12	456	80	123	510	96	22	21	48	363	36	7	59	141	57	220	14	14168
'35	36	5	41	486	11	1438	66	6	633	91	107	550	79	48	20	57	397	21	17	96	163	65	257	16	10513
'34	45	8	55	467	21	1720	97	6	632	104	113	613	125	117	5	74	285	28	32	140	166	64	184	7	10448
'33	51	6	55	839	18	2946	215	7	703	141	88	826	120	161	6	125	276	34	20	129	172	29	234	11	14470
'32	54	8	43	856	19	2206	132	6	762	163	145	917	137	85	11	138	212	33	43	105	154	57	252	11	14305
'31	189	42	167	1815	52	4469	146	61	1927	406	619	2337	287	115	82	166	427	152	116	205	797	156	860	52	33391
'30	567	62	267	1906	139	5306	272	199	2701	566	1282	3222	372	151	293	222	1018	274	165	323	1600	271	1426	71	47891
'29	686	85	228	1897	131	4684	235	354	3435	661	1583	3697	286	144	354	244	1209	316	170	343	2281	223	1580	82	53015
'28	633	44	141	876	75	2295	186	352	2054	432	1018	2455	130	75	454	149	599	184	87	249	1446	150	1127	73	33274
'27	313	29	78	503	39	1406	74	153	1145	258	648	1478	95	37	173	83	275	79	72	99	832	96	749	30	19533
Before '27	390	48	76	501	39	1447	112	275	1343	391	925	2255	75	90	250	74	370	98	71	113	1139	105	717	55	26083
Unid.*	106	3	38	35	71	2209	5	2	118	13	24	150	4	105	58	282	1014	90	84	6	4	71	1083	105	15619
Total	3170	358	1249	10934	635	39704	1662	1446	16280	3370	6768	19629	1884	1233	1742	1804	7499	1367	903	1998	9089	1411	8927	538	308227

Unid.*—Unidentified as to year of manufacture. All totals are as of July 1, 1940.

BY YEAR OF MANUFACTURE

	July 1 Total	6 mo. 1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	Prior to 1927	Year not given
Nash-Ajax-Lafayette	426,442	40,724	43,596	32,239	68,892	44,457	22,387	24,418	7,206	19,635	18,278	20,987	42,177	18,630	11,046	9,427	2,343
Oldsmobile	1,074,270	136,997	126,301	89,373	181,689	180,607	118,341	64,820	29,311	15,934	34,346	26,694	34,666	17,273	6,293	4,668	6,957
Packard	410,317	60,453	43,650	46,655	100,072	54,939	27,456	6,300	4,973	11,125	8,251	13,278	13,380	8,972	3,848	4,268	2,697
Plymouth	2,930,450	297,291	362,562	246,941	479,236	463,312	321,085	269,318	240,789	116,617	40,842	34,211	38,238				20,008
Pontiac	1,239,587	158,767	136,716	90,622	213,755	161,963	113,469	62,475	70,124	32,632	56,388	35,159	51,027	35,182	10,047	3,014	8,247
Studebaker-Rockne	568,219	69,638	74,128	37,716	74,337	51,840	34,575	41,898	21,426	29,914	30,910	26,856	26,738	19,541	11,099	14,484	3,119
Terraplane-Essex	373,969				74,942	70,114	41,280	34,196	26,007	17,780	21,841	21,041	38,426	14,340	6,982	3,903	3,117
Willys-Overland-Whippet	252,684	14,370	11,345	13,538	49,449	13,907	9,751	6,430	11,599	11,268	17,455	17,606	30,645	25,800	9,261	8,442	1,808
Willys-Knight	32,846								417	1,887	3,374	4,874	7,629	5,800	4,287	4,253	325
Miscellaneous	306,227	3,409	3,906	2,268	3,934	14,168	10,513	10,448	14,470	14,305	33,391	47,891	53,015	33,274	19,533	26,083	15,619
Totals	25,556,463	2,321,239	2,422,671	1,745,888	3,498,466	3,233,875	2,220,362	1,696,971	1,250,152	864,957	1,438,197	1,493,787	1,674,351	773,170	302,555	441,333	188,489

Data from R. L. Polk & Co.



Wholesale Values of Production

(U. S. and Canada)

	PASSENGER CARS			TRUCKS			CARS AND TRUCKS	
Year	Units*	Value	Average Price	Units†	Value	Average Price	Units	Value
1912	356,000	$ 335,000,000	$	22,000	$ 43,000,000	$	378,000	$378,000,000
1913	461,500	399,902,000		23,500	44,000,000		485,000	443,902,000
1914	543,679	413,859,000		25,375	45,098,464		569,054	458,957,843
1915	895,930	575,978,000		74,000	125,800,000		969,930	701,778,000
1916	1,525,578	921,378,000		92,130	161,000,000		1,617,708	1,082,378,000
1917	1,745,792	1,053,505,781		128,157	220,982,668		1,873,949	1,274,488,499
1918	943,436	801,937,925		227,250	434,168,992		1,170,686	1,236,106,917
1919	1,657,652	1,461,785,925		275,943	423,326,621		1,933,595	1,885,112,546
1920	1,905,560	1,809,170,963		321,789	423,249,410		2,227,349	2,232,420,373
1921	1,518,061	1,091,752,452	719	164,304	189,914,098	1034	1,682,365	1,261,666,550
1922	2,369,089	1,561,740,645	659	277,140	231,282,063	834	2,646,229	1,793,022,708
1923	3,753,945	2,274,554,488	606	426,505	317,478,940	744	4,180,450	2,592,033,428
1924	3,303,646	2,040,706,519	624	434,140	326,706,496	753	3,737,786	2,367,413,015
1925	3,870,744	2,544,528,799	657	557,056	470,634,763	845	4,427,800	3,015,163,562
1926	3,948,843	2,746,064,722	695	556,818	468,752,769	842	4,505,661	3,214,817,491
1927	3,083,360	2,265,633,102	735	497,020	435,072,641	875	3,580,380	2,700,705,743
1928	4,012,158	2,703,753,500	674	588,983	459,045,380	779	4,601,141	3,162,798,880
1929	4,794,898	2,981,141,842	622	826,817	595,504,039	720	5,621,715	3,576,645,881
1930	2,910,187	1,720,652,104	591	599,991	405,949,915	677	3,510,178	2,126,602,019
1931	2,038,183	1,153,907,947	566	434,176	272,748,305	628	2,472,359	1,426,656,252
1932	1,186,209	650,781,297	549	245,285	142,264,003	580	1,431,494	793,045,300
1933	1,627,367	795,304,780	489	358,542	192,131,509	536	1,985,909	987,436,289
1934	2,270,566	1,204,376,351	530	599,397	332,913,985	555	2,869,963	1,537,290,336
1935	3,387,806	1,788,635,180	529	732,005	399,211,522	545	4,119,811	2,187,846,702
1936‡	3,797,897	2,092,460,475	551	818,377	481,961,420	589	4,616,274	2,574,421,895
1937‡	4,068,935	2,397,717,534	589	947,502	573,310,107	605	5,016,437	2,971,027,641
1938‡	2,124,746	1,351,426,737	636	530,425	365,723,677	689	2,655,171	1,690,250,414
1939‡	2,975,165	1,887,536,118	634	757,553	530,494,488	700	3,732,718	2,418,030,606
1940‡	3,802,454	2,494,409,824	656	889,884	690,549,984	776	4,692,338	3,184,959,808

* Includes Taxicabs. † Includes Buses. ‡ Includes federal excise taxes, also standard equipment in 1937, 1938, 1939 and 1940.

Monthly Motor Vehicle Production

(U. S. and Canada)

Passenger Cars

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	
January	364,773	242,672	142,869	101,915	112,754	117,700	235,806	308,589	324,191	168,890	292,869	375,476	January
February	431,755	293,036	187,948	98,604	93,153	193,875	287,142	234,872	310,961	151,133	253,914	350,535	February
March	546,489	348,087	241,727	106,003	103,396	291,546	377,374	357,068	423,006	186,341	312,392	364,947	March
April	571,956	393,804	300,960	126,597	156,712	303,806	407,721	436,576	452,907	190,111	286,200	375,626	April
May	541,310	382,619	282,096	165,025	188,675	290,268	322,485	401,139	443,412	168,599	249,455	338,353	May
June	469,260	298,130	215,979	166,646	213,602	272,090	306,300	388,183	429,333	147,545	257,289	294,779	June
July	439,598	230,761	187,324	101,478	196,587	231,501	283,715	379,823	372,913	112,114	155,850	172,166	July
August	452,857	190,864	158,851	79,073	196,333	190,825	186,133	212,140	317,270	61,687	62,475	48,333	August
September	375,046	182,049	111,336	66,489	161,734	129,251	59,499	92,324	120,597	69,449	165,119	227,880	September
October	328,305	117,014	59,176	37,468	107,593	86,128	220,113	194,690	306,040	192,906	259,610	428,270	October
November	176,629	104,668	49,996	49,201	43,868	50,072	347,830	351,171	309,121	335,767	295,134	417,905	November
December	96,920	126,483	99,921	87,710	52,954	113,504	353,688	441,322	259,184	340,204	384,858	408,184	December
Total	4,794,893	2,910,187	2,038,183	1,186,209	1,627,361	2,270,566	3,387,806	3,797,897	4,068,935	2,124,746	2,975,165	3,802,454	Total

Motor Trucks

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	
January	57,765	40,938	35,475	21,160	19,429	44,870	64,529	68,655	74,995	58,062	64,093	74,016	January
February	65,950	52,925	41,863	24,291	15,592	44,952	63,204	65,938	72,939	51,464	63,606	71,690	February
March	79,587	69,031	47,671	21,274	18,508	61,068	70,520	81,875	96,016	52,106	77,107	75,285	March
April	91,855	74,477	53,138	28,539	27,975	67,532	69,338	91,049	100,324	47,818	68,066	76,807	April
May	94,940	62,080	47,805	27,491	35,132	60,348	59,324	79,379	96,965	41,575	63,793	74,139	May
June	98,164	51,466	41,496	23,572	43,448	48,292	65,785	81,185	91,820	41,857	66,964	67,787	June
July	78,703	44,960	35,386	15,137	39,310	44,546	61,582	71,383	93,996	38,336	62,750	74,005	July
August	59,985	43,296	32,890	15,319	42,601	53,890	58,942	63,794	87,802	35,259	40,868	41,533	August
September	54,683	46,557	31,876	20,003	35,874	46,335	33,229	47,496	55,033	20,174	27,560	56,703	September
October	66,235	41,928	22,406	14,157	30,772	49,643	60,203	35,359	31,939	22,380	65,079	86,104	October
November	50,368	37,493	20,118	12,560	19,106	35,107	60,720	54,628	67,508	54,638	73,407	93,068	November
December	28,582	34,840	24,052	21,782	30,801	42,814	64,629	77,636	88,165	66,756	84,260	98,747	December
Total	826,817	599,991	434,176	245,285	358,548	599,397	732,005	818,377	947,502	530,425	757,553	889,884	Total

Passenger Cars and Trucks

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	
January	422,538	283,610	178,344	123,075	132,183	162,570	300,335	377,244	399,186	226,952	356,962	449,492	January
February	497,705	345,961	229,811	122,895	108,745	238,827	350,346	300,810	383,900	202,597	317,520	422,225	February
March	626,076	417,118	289,398	127,277	121,904	352,614	447,894	438,943	519,022	238,447	389,499	440,232	March
April	663,811	468,281	354,098	155,136	184,687	371,338	477,059	527,625	553,231	237,929	354,266	452,433	April
May	636,250	444,699	329,901	192,516	223,807	350,616	381,809	480,518	540,377	210,174	313,248	412,492	May
June	567,424	349,596	257,475	190,218	257,050	320,382	372,085	469,368	521,153	189,402	324,253	362,566	June
July	518,301	275,721	222,710	116,615	235,897	276,047	345,297	451,206	466,909	150,450	218,600	246,171	July
August	512,842	234,160	191,741	94,392	238,934	244,715	245,075	275,934	405,072	96,946	103,343	89,866	August
September	429,729	228,606	143,212	86,492	197,608	175,586	92,728	139,820	175,630	89,623	192,679	284,583	September
October	394,540	158,942	81,582	51,625	138,365	135,771	280,316	230,049	337,979	215,286	324,689	514,374	October
November	226,997	142,161	70,114	61,761	62,974	85,179	408,550	405,799	376,629	390,405	368,541	510,973	November
December	125,502	161,323	123,973	109,492	83,755	156,318	418,317	518,958	347,349	406,960	469,118	506,931	December
Total	5,621,715	3,510,178	2,472,359	1,431,494	1,985,909	2,869,963	4,119,811	4,616,274	5,016,437	2,655,171	3,732,718	4,692,338	Total

Figures from U. S. Census Bureau (includes overseas assemblies of motor vehicles of American make) and Dominion Bureau of Statistics.

PRODUCTION • U. S. AND CANADA

Truck Production by Capacities

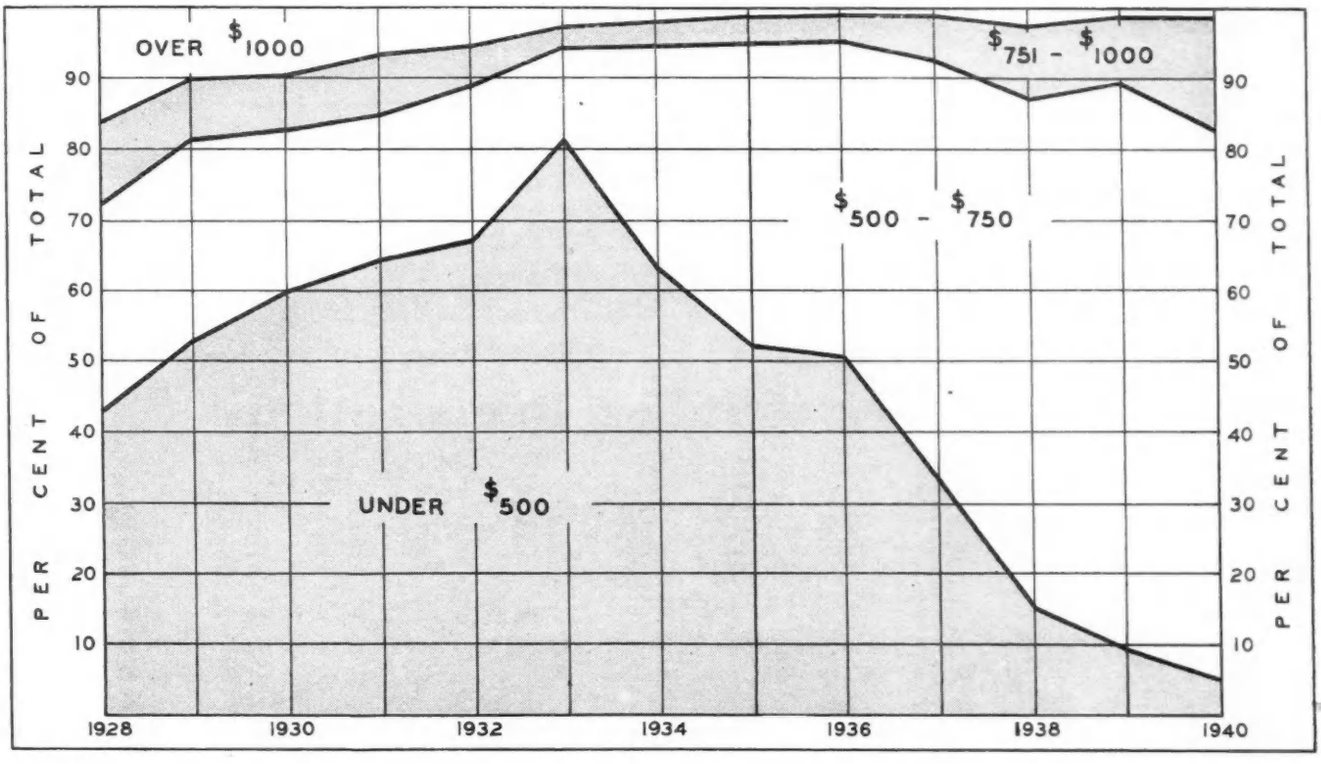
(U. S. and Canada)

Truck Tonnage	1934 Number	%	1935 Number	%	1936 Number	%	1937 Number	%	1938 Number	%	1939 Number	%	1940† Number	%
¾ ton or less	172,089	28.6	249,957	34.1	316,208	38.6	359,157	41.7	194,827	36.7	292,763	38.6	347,002	38.99
1 ton and less than 1½	2,341	.4	2,259	.3	9,686	1.1	21,590	2.3	30,951	5.8	29,725	3.9	42,501	4.78
1½ ton and less than 2	376,475	62.9	420,597	57.5	423,503	52.0	441,156	45.6	243,200	46.4	344,199	45.5	359,350	40.27
2 ton and less than 2½	25,935	4.3	28,950	4.0	30,637	3.7	30,431	3.2	18,375	3.5	26,701	3.5	53,913	6.06
2½ ton and less than 3½	11,136	1.9	10,465	1.4	12,309	1.5	18,971	2.0	9,954	1.9	18,801	1.0	26,808	3.01
3½ ton and less than 5	4,752	.8	3,612	.5	4,621	.5	6,170	.6	4,539	.9	7,619	2.5	8,941	1.00
5 ton and over	1,219	.2	3,824	.5	5,537	.7	9,248	1.0	5,820	1.1	7,365	1.0	8,540	.96
Special types	5,390	.9	*12,341	*1.7	*15,846	*1.9	*24,789	*2.6	*19,759	*3.7	*30,375	*4.0	*43,829	4.93
Total	599,397	100.0	732,005	100.0	818,377	100.0	947,502	100.0	530,425	100.0	757,553	100.0	889,884	100.00

† Partly estimated. * Includes Station Wagons.

Passenger Car Production by Wholesale Price Classes

(U. S. and Canada)



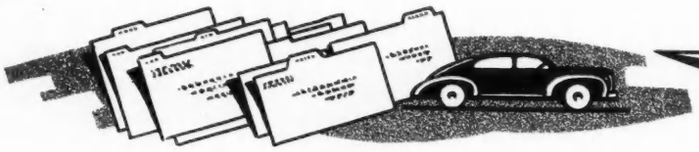
Number of Units

	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940*
Under $500	1,328,284	794,164	1,316,341	1,443,357	1,767,171	1,919,618	1,368,018	319,658	285,217	172,863
$501-$750	413,929	260,831	237,099	715,969	1,444,529	1,677,558	2,392,415	1,521,404	2,380,466	3,025,027
$751-$1000	162,954	74,610	31,610	66,223	110,813	143,269	260,260	224,839	253,931	528,045
$1,001-$1,500	80,687	36,670	20,125	27,576	28,726	39,997	31,226	42,160	49,033	67,567
$1,501-$2,000	33,846	8,699	10,409	8,391	8,716	11,545	11,633	3,661	4,304	7,415
$2,001-$3,000	12,714	8,679	8,725	6,879	5,413	4,326	4,061	2,161	1,870	1,293
$3,001 and over	5,759	2,532	2,052	2,151	2,428	1,564	1,302	663	344	244
Total	2,038,183	1,186,185	1,627,361	2,270,566	3,387,806	3,797,897	4,068,935	2,124,746	2,975,165	3,802,454

Per Cent of Total

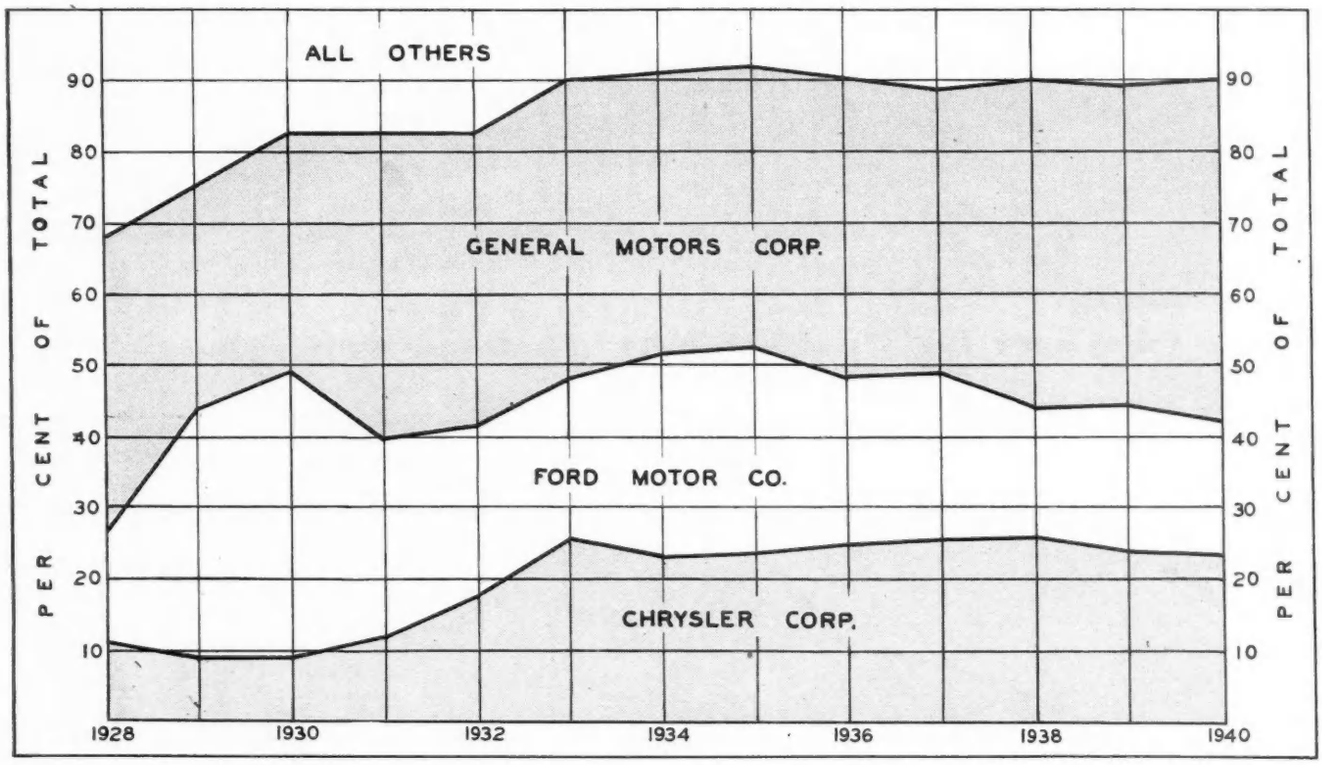
	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940*
Under $500	65.17	66.95	80.89	63.57	52.75	50.55	33.62	15.50	9.60	4.55
$501-$750	20.31	22.00	14.57	31.53	42.64	44.17	58.80	71.60	80.00	79.55
$751-$1,000	8.00	6.29	2.00	2.92	3.27	3.77	6.40	10.60	8.54	13.89
$1,001-$1,500	3.96	3.09	1.24	1.21	.85	1.05	.77	2.00	1.65	1.78
$1,501-$2,000	1.66	.73	.64	.37	.26	.30	.28	.17	.14	.19
$2,001-$3,000	.62	.73	.54	.31	.16	.11	.10	.10	.06	.03
$3,001 and over	.28	.21	.12	.09	.07	.05	.03	.03	.01	.01
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

* Partly estimated.



NEW

Sales by Manufacturing Groups



New Passenger Car Registrations*

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Auburn	11,270	29,536	11,646	5,038	5,536	5,163	1,848	146	.....	.....	.....
Bantam (Austin)	4,354	2,941	.....	3,675	1,057	.....	.....	.....	700	1,227	800
Buick	122,656	90,873	49,708	43,809	63,067	87,635	160,687	205,297	166,380	218,995	295,513
Cadillac	12,078	11,136	6,269	3,903	4,899	6,692	11,766	11,231	10,639	13,090	21,965
Chevrolet	618,884	583,429	322,860	474,493	534,906	656,698	930,250	768,040	464,337	598,341	853,529
Chrysler	60,908	52,650	26,016	28,677	28,052	40,536	58,698	91,622	46,184	63,956	100,117
Continental	.....	.....	.....	3,310	953	.....	.....	.....	.....	.....	.....
Cord	1,879	1,416	335	.....	.....	.....	1,174	1,149	.....	.....	.....
De Soto	35,267	28,430	25,311	21,260	11,447	26,952	45,088	74,424	35,259	51,951	71,943
De Vaux	.....	4,808	1,358	.....	.....	.....	.....	.....	.....	.....	.....
Dodge	64,105	53,090	28,111	86,062	90,139	178,770	248,518	255,258	104,881	176,585	197,252
Durant	21,440	7,229	1,735	.....	.....	.....	.....	.....	.....	.....	.....
Ford	1,055,097	528,581	258,927	311,113	530,528	826,519	748,554	765,933	363,688	491,496	542,755
Franklin	7,482	3,881	1,829	1,329	360	.....	.....	.....	.....	.....	.....
Graham	30,140	19,209	12,858	10,128	12,887	15,965	16,439	13,984	4,139	3,660	1,856
Hudson	30,466	19,189	8,641	2,946	19,307	21,587	20,825	90,043	40,889	62,855	79,979
Hupmobile	24,307	17,427	10,794	6,726	6,566	7,450	1,556	403	1,020	907	211
La Fayette	.....	.....	.....	.....	9,301	17,445	.....	.....	.....	.....	.....
La Salle	11,262	6,883	3,848	3,709	5,182	11,775	13,992	28,909	15,732	22,197	16,599
Lincoln	4,356	3,466	3,179	2,112	2,061	2,370	15,567	25,243	16,991	19,940	21,004
Marmon	12,369	5,687	1,365	86	.....	.....	.....	.....	.....	.....	.....
Mercury	.....	.....	.....	.....	.....	.....	.....	.....	6,835	65,884	80,418
Nash	51,086	39,366	20,233	11,353	14,315	17,739	43,070	70,571	31,814	54,050	52,853
Oakland	21,648	12,985	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oldsmobile	50,510	46,983	24,128	35,295	71,676	149,375	178,488	188,306	92,398	149,412	201,256
Packard	28,318	16,256	11,058	9,081	6,552	37,653	68,772	95,455	49,163	62,005	73,794
Pierce-Arrow	6,795	4,522	2,692	2,152	1,740	875	787	167	17	.....	.....
Plymouth	64,301	94,289	111,926	249,667	302,557	382,985	499,580	462,268	286,241	348,807	440,093
Pontiac	68,389	73,148	47,926	85,348	72,645	140,122	171,669	212,403	98,399	159,836	235,815
Reo	11,450	6,762	3,870	3,623	3,854	3,894	3,146	.....	.....	.....	.....
Rockne	.....	2	16,966	14,554	.....	.....	.....	.....	.....	.....	.....
Studebaker	56,526	46,533	25,002	21,688	41,560	39,573	67,835	70,048	41,504	84,660	102,281
Terraplane (Essex)	63,338	42,545	28,778	35,831	40,510	53,838	78,471	†	†	†	.....
Willys-Whippet	51,697	42,936	22,493	15,314	6,576	10,439	12,423	51,411	13,012	14,734	21,418
Willys-Knight	14,079	8,405	3,415	353	.....	.....	.....	.....	.....	.....	.....
Miscellaneous	9,532	3,548	3,732	1,159	324	1,859	5,294	1,441	799	1,789	4,454
Total	2,625,979	1,903,141	1,093,399	1,433,794	1,833,559	2,743,903	3,405,497	3,483,752	1,891,021	2,653,377	3,415,905

By Manufacturing Groups

Chrysler Corp.	224,581	228,459	191,384	335,666	432,195	629,243	851,884	883,572	472,565	641,299	809,405
Ford Motor Co.	1,059,453	532,047	262,103	313,225	532,589	828,839	764,121	791,176	337,514	567,320	644,177
General Motors	905,427	825,437	454,739	645,556	752,375	1,052,297	1,486,852	1,414,186	847,885	1,159,871	1,624,677
All Others	436,518	322,198	93,190	143,347	171,393	233,479	321,640	394,818	183,057	285,887	337,646

* Data from R. L. Polk & Co. † Terraplane included with Hudson.

REGISTRATIONS

New Truck Registrations*

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Autocar	2,009	1,748	1,015	1,127	1,139	1,001	1,451	2,181	1,617	2,044	1,955
Brockway	3,780‡	1,685‡	752	875	1,213	1,245	1,695	1,593	1,303	1,815	1,672
Chevrolet	118,253	99,600	60,784	99,880	157,507	167,129	204,344	183,674	119,479	169,457	194,038
Diamond T	2,888	2,483	2,250	4,139	5,440	6,454	8,750	8,118	4,393	5,412	6,358
Dodge	15,553	13,518	8,744	28,034	48,252	61,498	85,295	64,098	33,656	48,049	54,615
Federal	2,095	1,523	1,167	1,360	1,962	2,190	2,930	2,339	1,370	1,837	1,617
Ford	197,216	138,854	66,937	62,397	128,250	185,848	177,244	189,376	100,959	128,889	163,333
G. M. C.	9,004	6,919	6,359	6,602	10,449	11,442	26,980	43,522	20,152	34,908	42,486
Hudson	.....	.....	.....	.....	.....	.....	638	1,905	4,823	719	409	761
Indiana	.....	.....	957	1,252	729	862	1,705	1,371	435	178	.....
International	23,703	21,073	15,752	26,658	31,555	53,471	71,958	76,174	55,836	66,048	77,891
Mack	4,943	2,945	1,425	1,652	1,830	1,515	4,226	5,513	4,406	6,670	7,754
Plymouth	.....	.....	.....	.....	.....	660	2,420	13,709	6,652	8,294	9,573
Reo	6,427	5,166	3,187	3,042	5,035	5,101	4,227	4,254	2,929	853	625
Sterling	1,244	739	227	108	134	174	277	311	267	326	341
Stewart	2,315	1,394	867	684	736	880	1,280	1,148	390	70	.....
Studebaker	1,518	3,495	2,430	2,407†	1,697	2,100	3,279	5,129	2,000	2,110	1,207
White	4,395	2,561	2,138	1,384	3,963	3,304	5,757	5,933	3,514	4,558	7,344
Willys	4,264	3,131	1,132	233	25	2,280	2,441	1,122	1,889	1,634	2,291
All Others	11,107	7,050	4,290	4,035	3,970	2,901	3,480	3,861	3,383	3,187	3,466
Total	410,699	313,884	180,413	245,869	403,886	510,683	611,644	618,249	365,349	486,748	576,327

‡ Includes Indiana. † Includes Rockne. * Data from R. L. Polk & Co.

U. S. Registrations of New Cars and Trucks*

U. S. New Passenger Car Registrations

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	
January	180,094	126,776	87,493	79,821	61,242	136,635	215,775	280,685	145,765	203,212	260,216	January
February	211,645	134,133	82,813	69,464	94,887	170,615	176,651	215,049	120,359	164,942	224,625	February
March	298,824	200,841	92,192	78,741	173,287	261,477	301,239	363,738	181,222	248,038	312,371	March
April	357,064	265,732	121,093	119,909	223,050	319,650	397,186	384,951	192,241	268,335	353,239	April
May	345,031	247,727	131,282	160,242	219,225	293,199	392,744	391,697	178,052	280,834	345,748	May
June	260,861	201,911	148,752	174,190	223,864	280,360	369,422	360,236	156,384	243,741	318,615	June
July	254,098	194,322	104,188	185,660	229,006	285,178	357,490	365,767	148,896	229,308	315,246	July
August	203,737	155,744	93,457	178,661	193,198	233,851	262,912	306,958	127,954	182,633	211,031	August
September	175,286	124,903	81,893	157,976	146,931	157,098	208,896	235,683	93,269	141,633	148,000	September
October	150,219	102,659	63,195	136,326	140,937	148,389	171,397	202,898	119,053	212,586	290,495	October
November	93,066	75,829	44,358	94,180	107,574	220,262	223,732	196,463	200,853	231,571	301,430	November
December	96,054	77,564	45,683	58,624	75,356	237,194	327,053	179,621	226,973	246,544	334,073	December
Total	2,625,979	1,908,141	1,096,399	1,493,794	1,888,557	2,743,908	3,404,497	3,483,752	1,891,021	2,653,377	†3,415,905	Total

U. S. New Truck Registrations

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	
January	30,236	24,415	14,776	11,709	22,903	34,759	43,760	47,618	31,995	37,715	45,650	January
February	31,880	23,466	14,558	9,707	24,476	34,797	40,301	41,843	27,551	34,102	41,336	February
March	42,199	30,609	16,874	9,934	33,884	41,511	52,428	60,301	37,255	45,083	53,093	March
April	47,029	36,848	17,784	17,301	38,882	46,785	64,956	67,832	35,682	46,063	55,982	April
May	43,286	33,496	18,696	20,925	39,831	47,969	62,183	65,857	32,937	45,381	51,553	May
June	33,531	28,496	17,876	23,254	34,768	48,243	56,851	58,626	30,647	40,482	43,504	June
July	39,904	30,102	14,731	30,642	37,490	51,243	63,695	61,686	33,475	44,747	50,913	July
August	33,787	27,070	15,081	28,799	40,790	50,355	59,222	60,872	34,231	43,523	48,980	August
September	33,933	25,967	14,967	31,269	37,225	41,390	54,611	54,711	26,570	32,983	39,224	September
October	34,237	24,685	15,156	28,058	40,878	37,439	41,220	40,246	19,589	37,923	48,356	October
November	22,012	15,553	10,392	18,691	28,689	36,935	30,255	27,248	23,943	41,286	46,618	November
December	18,665	13,177	9,522	15,580	24,070	39,258	42,162	31,409	31,474	37,460	51,095	December
Total	410,699	313,884	180,413	245,869	403,896	510,683	611,644	618,249	365,349	486,748	†576,327	Total

Total U. S. New Passenger Car and Truck Registrations

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	
January	210,330	151,191	102,269	91,530	84,145	171,394	259,535	328,303	177,760	240,927	305,866	January
February	243,525	157,599	97,371	79,171	119,363	205,412	216,952	256,892	147,910	199,044	265,961	February
March	341,023	231,450	109,066	88,675	207,171	302,988	353,667	424,039	218,477	293,121	365,464	March
April	404,093	302,580	138,877	137,210	261,932	366,435	462,142	452,783	227,923	314,398	409,221	April
May	388,317	281,223	149,978	181,167	259,056	341,167	454,927	457,554	210,989	326,215	397,301	May
June	294,392	230,407	166,628	197,444	258,632	328,603	426,273	418,862	187,031	284,223	362,119	June
July	294,002	224,424	118,919	216,302	266,496	336,421	421,185	427,453	182,371	274,055	366,159	July
August	237,524	182,814	108,538	207,460	233,988	284,206	322,134	367,830	162,185	226,156	260,011	August
September	209,219	150,870	96,860	189,245	184,156	198,488	263,507	290,394	119,839	174,616	187,224	September
October	184,456	127,344	78,351	164,384	181,815	185,828	212,617	243,144	138,642	250,509	338,851	October
November	115,078	91,382	54,750	112,871	136,263	257,197	253,987	223,717	224,796	272,857	348,048	November
December	114,719	90,741	55,205	74,204	99,426	276,452	369,215	211,030	258,447	284,004	385,168	December
Total	3,036,678	2,222,025	1,276,812	1,739,663	2,292,443	3,254,591	4,016,141	4,102,001	2,256,370	3,140,125	†3,992,232	Total

* Figures from R. L. Polk & Co. † Passenger car total includes 816 delinquent registrations which cannot be assigned to any month. The truck total contains 23 delinquents, making a total car and truck delinquent registrations of 849.

ESTIMATED DOLLAR VOLUME OF NEW CAR RETAIL SALES

1940 New Car Retail Sales—$3,012,300,000

Average passenger car delivered price at factory during 1940 was $883 as compared with $805 during 1937, an increase of 9.7 per cent.

Month	1937			1938			1939			1940		
	Units †	Dollar ‡ Volume	Average Price per Car	Units †	Dollar ‡ Volume	Average Price per Car	Units †	Dollar ‡ Volume	Average Price per Car	Units †	Dollar ‡ Volume	Average Price per Car
January	280,350	$222,300,000	$768	145,663	$126,600,000	$869	203,175	$173,200,000	$852	260,212	$226,100,000	$869
February	214,834	167,800,000	781	120,261	104,400,000	868	164,808	129,800,000	788	226,607	194,300,000	857
March	363,477	286,200,000	787	181,037	157,200,000	868	247,930	210,400,000	849	312,285	269,300,000	862
April	385,187	305,300,000	793	192,086	166,800,000	868	268,284	226,900,000	846	352,685	304,900,000	864
May	391,608	309,900,000	791	177,951	154,300,000	866	280,800	237,700,000	846	345,191	298,100,000	864
June	360,159	285,100,000	792	156,290	135,600,000	867	243,601	205,600,000	844	318,155	274,300,000	862
July	365,783	288,200,000	788	148,798	128,400,000	863	229,271	192,000,000	837	314,822	271,800,000	863
August	307,285	244,600,000	796	127,955	110,100,000	860	182,598	153,700,000	842	210,621	182,600,000	867
September	231,851	187,600,000	809	93,165	79,700,000	856	141,578	121,900,000	861	147,529	131,700,000	893
October	202,471	168,000,000	830	118,957	105,700,000	888	212,541	188,100,000	885	290,109	271,000,000	934
November	196,133	176,200,000	898	200,802	172,300,000	857	231,553	204,200,000	882	300,874	278,500,000	926
December	179,687	157,900,000	879	226,832	193,200,000	851	246,520	216,500,000	878	333,987	309,700,000	927
Total	3,478,825	$2,799,100,000	$805*	1,889,797	$1,634,300,000	$864*	2,652,659	$2,260,000,000	$852*	3,413,077	$3,012,300,000	$883*

† The difference between the number of units shown here and those for new car registrations shown elsewhere is due to the cars grouped under "Miscellaneous" of which no account is taken in these calculations.

‡ All calculations are based on Delivered Price at Factory of the five-passenger, four-door sedan in conjunction with new car registrations of each model.

* Average for the year.

New Motor Vehicle Registrations by States*

	New Passenger Cars			New Trucks			Total New Motor Vehicles			Per Cent of Total		
	1940	1939	1938	1940	1939	1938	1940	1939	1938	1940	1939	1938
Alabama	36,326	30,657	19,427	12,928	11,978	7,041	49,254	42,635	26,468	1.23	1.36	1.17
Arizona	10,943	8,191	6,738	2,838	2,478	2,051	13,781	10,669	8,789	.34	.34	.39
Arkansas	21,916	19,859	12,244	10,890	9,200	5,909	32,806	29,059	18,153	.82	.93	.80
California	250,894	187,720	148,011	32,397	25,656	23,846	283,291	213,376	171,857	7.10	6.80	7.62
Colorado	27,668	24,630	17,699	6,308	5,935	4,771	33,976	30,565	22,470	.85	.97	1.00
Connecticut	56,821	38,859	26,283	6,888	5,466	4,422	63,709	44,325	30,705	1.60	1.41	1.36
Delaware	9,962	7,649	5,429	1,630	1,486	1,161	11,592	9,135	6,590	.29	.29	.29
District of Columbia	29,170	25,637	17,944	2,614	2,514	1,753	31,784	28,151	19,697	.80	.90	.87
Florida	55,146	42,462	26,102	12,485	9,375	6,540	67,631	51,837	32,642	1.69	1.65	1.45
Georgia	52,400	41,125	25,319	15,468	11,702	6,818	67,868	52,827	32,137	1.70	1.68	1.42
Idaho	13,120	9,890	6,883	3,854	3,346	2,613	16,974	13,236	9,496	.42	.42	.42
Illinois	245,552	193,235	133,914	29,535	25,353	18,055	275,087	218,588	151,969	6.89	6.96	6.74
Indiana	113,479	84,494	56,339	16,575	16,857	9,899	130,054	101,351	66,238	3.26	3.23	2.95
Iowa	65,617	59,666	47,489	13,790	12,245	8,940	79,407	71,911	56,429	1.99	2.29	2.50
Kansas	46,598	34,687	27,301	9,815	7,079	7,960	56,413	41,766	35,261	1.41	1.33	1.56
Kentucky	38,956	30,806	22,906	10,490	8,908	7,244	49,446	39,714	30,150	1.24	1.26	1.34
Louisiana	37,673	32,580	24,842	9,695	8,185	6,155	47,368	40,765	30,997	1.19	1.30	1.37
Maine	19,316	14,204	11,308	5,278	4,317	3,315	24,594	18,521	14,353	.62	.59	.64
Maryland	51,319	39,389	27,331	8,054	6,307	4,741	59,373	45,696	32,072	1.49	1.46	1.42
Massachusetts	110,599	92,490	63,682	14,392	12,931	9,459	124,991	105,411	73,141	3.13	3.36	3.24
Michigan	226,696	163,017	87,184	21,622	17,704	11,268	248,318	180,721	98,452	6.22	5.76	4.36
Minnesota	73,653	60,771	52,667	12,566	10,528	8,674	86,219	71,299	61,341	2.16	2.27	2.72
Mississippi	26,747	22,302	13,670	10,604	8,472	5,826	37,351	30,774	19,496	.94	.98	.86
Missouri	96,901	76,705	55,543	19,701	16,338	11,718	116,602	93,043	67,261	2.92	2.96	2.98
Montana	16,697	13,523	10,154	5,359	4,561	4,112	22,056	18,084	14,266	.55	.58	.63
Nebraska	28,935	25,715	22,319	6,146	5,449	4,664	35,081	31,164	26,983	.88	.99	1.20
Nevada	4,075	3,282	2,576	1,133	876	731	5,208	4,158	3,307	.13	.13	.15
New Hampshire	13,377	10,328	7,062	3,012	2,748	1,759	16,389	13,076	8,821	.41	.42	.39
New Jersey	127,347	96,049	70,764	14,710	12,725	11,591	142,057	108,774	82,355	3.56	3.46	3.65
New Mexico	10,039	8,315	6,393	4,119	3,732	2,911	14,158	12,047	9,304	.35	.38	.41
New York	320,797	264,287	194,049	35,721	32,109	26,656	356,518	296,396	220,705	8.93	9.44	9.78
North Carolina	56,760	46,160	33,922	14,750	12,867	9,309	71,510	59,027	43,231	1.79	1.88	1.92
North Dakota	12,358	9,805	8,620	3,790	2,740	2,463	16,148	12,545	11,083	.40	.40	.49
Ohio	233,439	167,526	105,439	26,509	22,536	15,261	259,948	190,062	120,700	6.51	6.05	5.35
Oklahoma	45,966	39,627	34,343	11,484	10,198	8,956	57,450	49,825	43,299	1.44	1.59	1.5
Oregon	34,358	25,574	18,769	7,212	5,873	4,064	41,570	31,447	22,833	1.04	1.00	1.01
Pennsylvania	274,035	196,201	140,332	36,107	28,915	21,044	310,142	225,116	161,376	7.77	7.17	7.15
Rhode Island	19,509	16,306	10,483	2,664	2,283	1,531	22,173	18,589	12,014	.56	.59	.53
South Carolina	30,432	25,100	15,748	7,634	6,431	4,305	38,066	31,531	20,053	.95	1.00	.89
South Dakota	12,296	10,589	7,911	3,407	2,752	2,003	15,703	13,341	9,914	.39	.42	.44
Tennessee	49,922	37,468	24,973	12,797	9,732	6,476	62,719	47,200	31,449	1.57	1.50	1.39
Texas	160,056	132,313	103,817	38,599	33,426	25,882	198,655	165,739	129,699	4.98	5.28	5.76
Utah	12,689	10,038	7,045	3,095	3,034	1,984	15,784	13,072	9,029	.40	.42	.40
Vermont	8,792	6,666	4,687	2,325	2,076	1,228	11,117	8,742	5,915	.28	.28	.26
Virginia	57,840	42,172	31,204	12,748	10,391	7,906	70,588	52,563	39,110	1.77	1.67	1.73
Washington	46,497	33,316	23,935	9,306	7,149	5,416	55,803	40,465	29,351	1.40	1.29	1.30
West Virginia	31,102	22,955	16,483	7,800	6,604	4,694	38,902	29,559	21,177	.97	.94	.94
Wisconsin	83,340	61,873	48,872	13,051	10,949	8,516	96,391	72,822	57,388	2.41	2.32	2.54
Wyoming	7,775	7,174	5,136	2,432	2,232	1,708	10,207	9,406	6,844	.26	.30	.30
Total	3,415,905	2,653,377	1,891,021	576,327	486,748	365,349	3,992,232	3,140,125	2,256,370	100.00	100.00	100.00

* Data from R. L. Polk & Co.

REGISTRATIONS

U. S. Motor Vehicle Registrations by Years

	Passenger Cars	Trucks and Buses	Total Motor Vehicles	Per Cent Increase
1895	4		4	
1896	16		16	
1897	90		90	
1898	800		800	
1899	3,200		3,200	
1900	8,000		8,000	
1901	14,800		14,800	
1902	23,000		23,000	
1903	32,920		32,920	
1904	54,590	410	55,000	
1905	77,400	600	78,000	42
1906	105,900	1,100	107,000	37
1907	140,300	1,700	142,000	33
1908	194,400	3,100	197,500	39
1909	305,950	6,050	312,000	58
1910	458,500	10,000	468,500	50
1911	619,500	20,000	639,500	36
1912	902,600	41,400	944,000	48
1913	1,194,262	63,800	1,258,062	33
1914	1,625,739	85,600	1,711,339	36
1915	2,309,666	136,000	2,445,666	43
1916	3,297,996	215,000	3,512,996	44
1917	4,657,340	326,000	4,983,340	42
1918	5,621,617	525,000	6,146,617	23
1919	6,771,074	794,372	7,565,446	23
1920	8,225,859	1,006,082	9,231,941	22
1921	9,346,195	1,118,520	10,464,715	13
1922	10,864,128	1,375,725	12,239,853	17
1923	13,479,608	1,612,569	15,092,177	23
1924	15,460,649	2,134,724	17,595,373	17
1925	17,496,420	2,440,854	19,937,274	13
1926	19,237,171	2,764,222	22,001,393	10
1927	20,219,224	2,914,019	23,133,243	5
1928	21,379,125	3,113,999	24,493,124	6
1929	23,121,589	3,379,854	26,501,443	8
1930	23,183,241	3,473,831	26,657,072	0.2
1931*	22,567,381	3,426,515	25,993,896	−2.5
1932*	21,139,092	3,202,730	24,341,822	−6.4
1933	20,557,493	3,292,439	23,849,932	−2.0
1934*	21,535,199	3,346,268	24,881,467	4.3
1935*	22,630,715	3,595,042	26,225,757	5.2
1936*	24,161,820	3,929,889	28,091,709	7.2
1937*	25,476,786	4,172,484	29,649,270	5.6
1938*	25,031,225	4,127,390	29,158,615	−1.7
1939*	25,854,022	4,440,206	30,294,228	+4.0
1940*	26,915,836	4,553,051	31,468,887	+4.0

* Automotive Industries *count, all others Bureau of Public Roads.*

U. S. Registrations by States

(As of December 31, 1940 and 1939.)

	Passenger Cars		Trucks		Buses		Total Registered Motor Vehicles		Per Cent Change	Per Cent of Total		Persons Per Motor Vehicle
	1940	1939	1940	1939	1940	1939	1940	1939		1940	1939	
Alabama (1)	263,494	251,796	58,707	54,947	611	511	322,812	307,254	+ 5.1	1.02	1.01	8.77
Arizona	110,000	106,924	24,500	24,083	350	348	134,850	131,355	+ 2.5	.43	.43	3.70
Arkansas	187,545	179,175	64,199	60,535	1,100	1,006	252,844	240,716	+ 5.1	.80	.79	7.70
California	2,374,507	2,295,292	(7) 326,998	(7) 309,855	(2)	(2)	2,701,505	2,605,147	+ 4.0	8.59	8.60	2.65
Colorado	321,810	312,847	30,298	30,636	(3)	(3)	352,108	343,483	+ 2.6	1.12	1.13	3.19
Connecticut	410,414	385,822	74,456	66,273	1,037	1,168	485,907	453,263	+ 7.2	1.54	1.50	3.51
Delaware	59,424	56,744	11,030	11,248	(2)	(2)	70,454	67,992	+ 3.5	.22	.22	3.78
District of Columbia	164,400	149,745	13,500	13,718	1,700	1,210	179,600	164,673	+ 9.1	.57	.54	3.69
Florida	413,000	379,868	79,000	76,320	3,500	1,031	495,500	457,219	+ 8.2	1.57	1.51	3.82
Georgia	413,061	386,002	91,321	85,520	3,723	2,716	508,105	474,238	+ 7.2	1.61	1.57	6.14
Idaho	129,360	121,484	33,382	31,380	.....	125	162,742	152,989	+ 6.3	.52	.51	3.22
Illinois	1,707,512	1,626,689	228,889	232,888	(2)	(2)	1,936,401	1,859,577	+ 4.1	6.16	6.14	4.07
Indiana	872,000	822,946	130,000	129,695	1,350	1,254	1,003,350	953,895	+ 5.0	3.19	3.15	3.41
Iowa	689,307	670,080	101,244	93,139	(2)	(2)	790,551	763,219	+ 3.6	2.51	2.52	3.21
Kansas	480,008	475,464	102,665	98,616	.....	392	582,673	574,472	+ 1.6	1.85	1.90	3.09
Kentucky	379,055	367,215	75,096	69,629	.....	666	454,151	437,510	+ 3.8	1.44	1.44	6.26
Louisiana	284,362	263,942	88,973	84,475	(4) 4,945	(4) 5,101	378,280	353,518	+ 7.0	1.20	1.17	6.24
Maine	160,000	157,171	42,000	41,673	200	179	202,200	199,023	+ 1.5	.64	.66	4.19
Maryland (1)	385,041	364,064	60,044	58,027	1,136	1,064	446,221	423,155	+ 5.6	1.42	1.40	4.08
Massachusetts	790,102	761,363	109,462	106,624	4,859	4,841	904,423	872,828	+ 3.7	2.87	2.88	4.77
Michigan	1,077,534	1,031,175	117,500	90,796	(2)	(2)	1,195,034	1,121,971	+ 6.5	3.80	3.70	4.39
Minnesota	746,500	721,217	124,602	118,227	249	256	871,351	839,700	+ 4.0	2.77	2.77	3.20
Mississippi	190,370	185,475	58,875	57,097	460	1,514	249,705	244,086	+ 2.2	.79	.81	8.74
Missouri	768,345	734,894	152,924	141,609	.....	591	921,269	877,094	+ 5.0	2.93	2.90	4.10
Montana	143,068	135,839	47,964	44,480	(2)	(2)	191,032	180,319	+ 6.0	.61	.60	2.92
Nebraska	346,000	344,278	66,300	65,632	180	173	412,480	410,083	+ 0.5	1.31	1.35	3.19
Nevada	26,507	23,823	6,571	5,811	(3)	(3)	33,078	29,634	+11.5	.14	.10	3.34
New Hampshire	104,980	102,509	25,399	24,964	(2)	(2)	130,379	127,473	+ 2.2	.41	.42	3.76
New Jersey	933,699	881,727	136,887	132,819	5,196	4,991	1,075,782	1,019,537	+ 5.6	3.42	3.36	3.86
New Mexico	95,257	93,153	30,090	28,488	1,318	(3)	126,665	121,641	+ 4.0	.40	.40	4.19
New York	2,392,008	2,299,803	317,507	350,693	8,808	(5) 32,513	2,718,323	2,683,009	+ 1.1	8.63	8.86	4.95
North Carolina	504,200	477,588	86,200	81,068	1,050	931	591,450	559,587	+ 5.8	1.88	1.85	6.03
North Dakota	145,746	142,384	37,019	34,544	157	139	182,922	177,067	+ 3.2	.58	.58	3.51
Ohio	1,750,000	1,702,761	186,000	184,223	(2)	(2)	1,936,000	1,886,984	+ 2.8	6.15	6.23	3.56
Oklahoma	468,957	455,771	103,391	98,172	934	2,220	573,282	556,163	+ 3.0	1.82	1.84	4.07
Oregon	325,130	305,943	67,756	62,749	692	638	393,578	369,330	+ 6.6	1.25	1.22	2.76
Pennsylvania	1,859,394	1,824,567	263,112	269,062	5,778	5,605	2,128,284	2,099,234	+ 1.4	6.76	6.93	4.65
Rhode Island	160,138	154,916	20,743	19,699	444	453	181,325	175,068	+ 3.6	.59	.58	.....
South Carolina (6)	272,303	256,574	39,070	44,142	978	(3)	312,351	300,716	+ 4.0	.99	.99	6.08
South Dakota	163,173	158,821	32,295	30,282	117	103	195,585	189,206	+ 3.3	.62	.62	3.28
Tennessee	356,400	356,183	65,000	67,053	(3)	720	421,400	423,956	− 0.4	1.34	1.40	6.91
Texas	1,342,861	1,281,566	350,208	335,467	812	832	1,693,881	1,617,865	+ 4.9	5.38	5.34	3.78
Utah	117,119	129,330	23,584	25,209	662	952	141,365	155,491	− 9.0	.45	.51	3.89
Vermont	83,922	81,041	9,628	9,576	95	96	93,645	90,713	+ 3.2	.30	.30	3.83
Virginia	413,340	383,222	74,720	68,723	912	798	488,972	452,743	+ 8.0	1.55	1.49	5.47
Washington	476,000	449,706	88,000	85,494	800	435	564,800	535,635	+ 5.3	1.79	1.77	3.07
West Virginia	242,886	237,189	51,414	48,289	663	689	294,963	286,167	+ 3.0	.94	.94	6.44
Wisconsin	748,613	702,625	150,000	141,590	650	616	899,263	844,831	+ 6.5	2.86	2.79	3.48
Wyoming	66,984	65,309	19,062	18,090	(3)	(3)	86,046	83,399	+ 3.1	.27	.28	2.91
Total	26,915,836	25,854,022	4,497,585	4,363,329	55,466	76,877	31,468,887	30,294,228	+ 4.0	100.00	100.00	4.18

(1)—For fiscal year ending September 30th.
(2)—Included with trucks.
(3)—Included with passenger cars.
4)—Includes taxicabs and school buses.
(5)—Includes taxicabs.
(6)—For fiscal year ending October 31.
(7)—Includes approximately 130,000 light commercial vehicles registered as passenger cars during 1940, and 127,030 during 1939.

World Registrations by Continental Divisions and Countries

By Special Arrangement with the American Automobile (Overseas Edition)

As reports were not available for many of the countries at war, no world total is shown

The AMERICAS

	Motor Vehicles	Cars	Trucks	Buses	Motor-cycles
Alaska	4,010	2,411	1,250	349	27
Antigua	315	273	35	7	20
Argentina	307,935	220,418	87,517	†	.....
Bahamas	1,600	1,200	400	.....	45
Barbados	1,910	1,265	490	155	82
Bermuda	71	6	61	4	.....
Bolivia	2,285	1,197	1,014	74	39
Brazil	205,722	122,338	76,608	6,776	.....
British Guiana	2,029	1,532	384	113	166
British Honduras	286	118	168	.....	.....
Canada	1,468,883	1,228,120	237,898	2,865	13,925
Cayman Islands	79	63	11	5	2
Chile	48,000	33,000	15,000	†	850
Colombia	34,000	19,000	15,000	.....	.....
Costa Rica	3,945	2,354	1,123	468	360
Cuba	46,298	28,252	15,015	3,031	395
Dominica	93	67	26	.....	14
Dominican Republic	2,700	1,800	900	†	175
Dutch Guiana	297	251	44	2	118
Ecuador	3,903	1,898	1,567	438	80
French Guiana	311	186	119	6	5
Grenada	532	422	110	†	71
Guadeloupe	2,250	1,775	475	.....	.....
Guatemala	4,822	3,014	1,125	683	788
Haiti	2,500	1,800	700	.....	60
Honduras	1,569	778	751	40	21
Jamaica	11,792	8,929	2,715	148	297
Martinique	2,975	2,320	655	†	.....
Mexico	112,000	84,000	21,500	6,500	4,000
Montserrat	92	68	24	†	3
Netherlands W. I.	5,608	3,988	1,168	452	250
Newfoundland	5,710	4,380	1,248	82	155
Nicaragua	907	606	278	23	130
Panama	13,850	11,500	1,750	600	75
Paraguay	2,200	1,200	1,000	†	.....
Peru	24,554	13,930	9,056	1,568	500
Puerto Rico	27,030	20,050	6,534	446	263
St. Kitts-Nevis	289	268	11	10	13
St. Lucia	239	191	48	†	22
St. Pierre-Miquelon	118	41	77	.....	10
St. Vincent	228	164	30	34	10
El Salvador	3,311	2,346	437	528	504
Trinidad and Tobago	12,343	6,755	5,588	†	500
Turks & Caicos Is.	26	21	5	.....	5
United States	31,468,887	26,915,836	4,497,585	55,466	122,761
Uruguay	28,823	21,550	7,273	†	850
Venezuela	35,534	19,595	14,511	1,428	1,607
Virgin Islands	1,050	716	312	22	16
West Indies (Others)	350	275	75	.....	.....
Total, 1940	33,814,261	28,792,267	5,029,671	82,323	135,167
**Total, 1940	2,435,374	1,876,431	532,086	*26,857	*12,426
Total, 1939	32,603,328	27,639,864	4,861,406	102,058	145,107
**Total, 1939	2,309,100	1,785,842	498,077	25,181	*27,488

† Included with trucks. * Not complete for all territories. ** Not including United States.

AFRICA

	Motor Vehicles	Cars	Trucks	Buses	Motor-cycles
Algeria			(No report)		
Anglo-Egyptian Sudan	4,252	2,038	2,214	.....	154
Angola	3,250	1,250	1,950	50	235
Basuteland	625	550	75	.....	.....
Bechuanaland	600	400	200	.....	.....
Belgian Congo	897	623	274	.....	130
British East Africa	28,463	17,065	11,398	†	3,211
British Somaliland			(No report)		
British West Africa	16,216	6,351	9,865	†	1,160
Canary Islands	2,000	.....	.....	.....	.....
Egypt	33,682	29,455	2,917	1,310	2,102
French Equatorial Africa	1,265	527	738	.....	200
French Somaliland			(No report)		
French West Africa	15,803	6,161	9,642	.....	.....
Italian East Africa			(No report)		
Liberia	220	58	159	3	40
Madagascar	8,328	5,778	2,525	25	2,754
Madeira	662	272	231	159	20
Mauritius	2,888	2,326	427	135	219
Morocco			(No report)		
Nyasaland	1,300	800	500	.....	.....
Portuguese East Africa	6,965	3,760	2,905	300	776
Reunion Island	1,500	1,100	400	.....	.....
Rhodesia	31,645	21,500	10,020	125	1,800
Seychelles	160	135	25	.....	.....
Southwest Africa	4,500	3,100	1,400	.....	.....
Spanish Morocco	673	572	90	11	32
Swaziland	560	435	125	.....	.....
Tangier			(No report)		
Tripolitania			(No report)		
Tunisia			(No report)		
Union of South Africa	394,698	336,528	56,270	1,900	25,080
Total, 1940 ‡	561,152	*440,784	*114,350	*4,018	*37,913
Total, 1939	692,974	*543,740	*140,090	*5,750	*52,293

* Not complete for all countries. † Included in Trucks. ‡ Exclusive of unreporting countries

EUROPE

	Motor Vehicles	Cars	Trucks	Buses	Motor-cycles
Azores	916	769	46	101	131
Belgium			(No report)		
Bulgaria	6,650	3,650	3,000	†	3,600
Denmark	31,676	8,370	22,278	1,028	.....
Eire	67,426	54,600	12,012	814	2,840
Estonia	6,599	3,672	2,600	287	3,500
Faroe Islands	91	19	72	.....	6
Finland	13,500	.....	.....	.....	.....
France			(No report)		
Germany	325,000	225,000	100,000	†	.....
Gibraltar	1,254	947	267	40	.....
Great Britain			(No report)		
Greece	17,500	6,700	8,200	2,600	1,600
Holland	11,000	5,000	5,500	500	.....
Hungary	32,754	27,199	4,799	756	13,529
Iceland	2,187	936	1,112	139	101
Italy			(No report)		
Latvia			(No report)		
Lithuania			(No report)		
Luxembourg			(No report)		
Malta	2,477	626	1,250	601	326
Monaco			(No report)		
Norway			(No report)		
Portugal	51,000	36,500	14,500	†	5,000
Rumania	22,300	17,500	4,500	300	3,000
Spain	123,300	82,000	35,200	6,100	7,000
Spitzbergen	3	1	2	.....	.....
Sweden	248,854	180,717	63,028	5,109	110,262
Switzerland	56,200	40,000	15,000	1,200	15,000
U. S. S. R. (Russia)	800,000	100,000	700,000	.....	.....
Yugoslavia	22,185	15,886	5,331	968	11,643
Total, 1940 ‡	1,842,832	810,092	998,697	20,543	177,539
Total, 1939	9,436,555	*6,704,286	*2,511,122	*150,885	*2,771,112

* Not complete for all territories. † Included in trucks. ‡ Exclusive of unreporting countries.

ASIA

	Motor Vehicles	Cars	Trucks	Buses	Motor-cycles
Afghanistan	2,100	400	1,700	.....	.....
Arabia	1,120	862	136	122	.....
Bahrain	486	281	90	115	35
British Malaya	49,560	35,760	11,670	2,130	3,550
British North Borneo	307	220	87	.....	116
Ceylon	27,777	20,833	4,459	2,485	2,761
China	32,118	12,303	18,579	1,236	.....
Chosen	6,850	1,850	3,000	2,000	2,400
Cyprus	2,818	1,532	18	1,268	536
French Indo-China	30,916	26,199	2,681	2,036	3,329
Guam	496	231	259	6	8
Hongkong	6,655	5,120	1,400	135	440
India	123,400	77,000	19,400	27,000	6,100
Iran	11,152	3,772	7,380	.....	250
Iraq	7,429	4,640	2,789	†	233
Japanese Empire	100,000	.....	.....	.....	.....
Kuwait	182	129	22	31	22
Macao	506	300	111	95	45
Manchukuo	12,150	3,600	5,150	3,400	1,200
Netherlands E. Indies	78,287	55,256	14,606	8,425	14,779
Onan	52	49	2	1	.....
Palestine	13,725	8,146	4,325	1,254	1,200
Philippine Islands	48,583	31,490	16,068	1,025	532
Portuguese Timor	94	69	25	.....	9
Sarawak	598	335	263	.....	125
Syria	10,859	8,716	1,661	482	777
Thailand (Siam)	13,518	6,279	6,186	1,053	995
Trans Jordan	501	301	167	33	.....
Turkey	12,872	4,611	7,510	751	1,967
Total, 1940	595,111	*310,284	*129,744	*55,083	*40,409
Total, 1939	695,738	*427,083	*234,337	*32,218	*101,441

* Not complete for all countries. † Included in cars.

OCEANIA

	Motor Vehicles	Cars	Trucks, Buses	Motor-cycles
Australia	808,500	580,000	228,500	73,000
Cook Islands	84	41	43	5
Fiji Islands	2,077	1,227	850	90
French Oceania	707	585	122	45
Hawaii	72,060	58,630	13,430	1,290
New Caledonia	1,135	975	160	300
New Hebrides	75	40	35	3
New Zealand	276,057	220,961	55,096	17,014
Other Oceania	500	.....	.....	.....
Papua	250	125	125	15
Samoa	56	20	36	3
Total, 1940	1,161,501	*862,604	*298,397	*91,765
Total, 1939	1,200,808	*887,409	*312,799	*95,234

*Not complete for all territories.

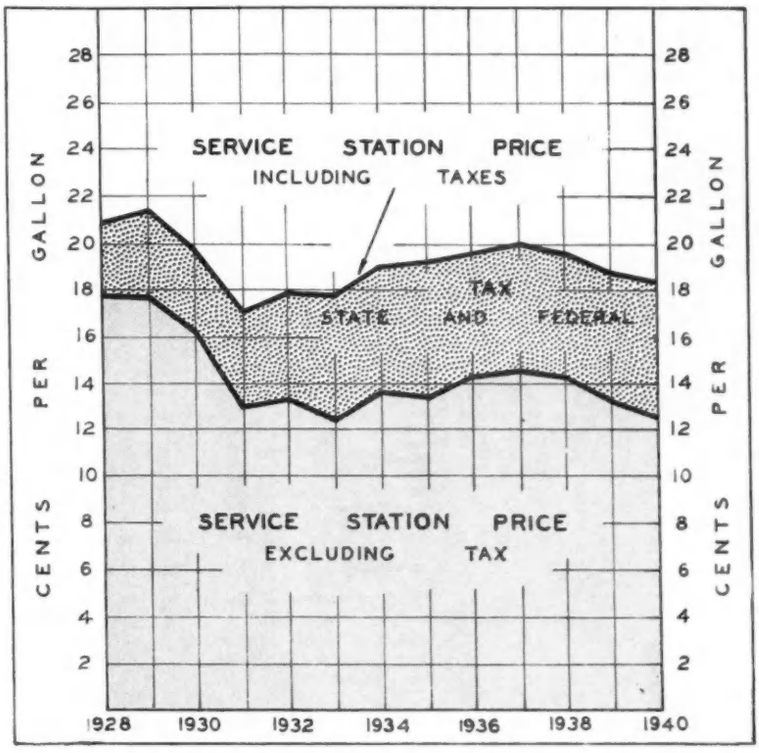
Gasoline Prices†

Average 50 Representative Cities in the United States

	Cents per Gallon		
	Service Station (Ex. Tax)	State Gasoline Tax	Service Station (Inc. Tax)
1926	20.97	2.41	23.38
1927	18.28	2.81	21.09
1928	17.90	3.04	20.94
1929	17.92	3.50	21.42
1930	16.16	3.79	19.95
1931	12.98	4.00	16.98
1932	13.30	4.63*	17.93
1933	12.41	5.41*	17.82
1934	13.64	5.21*	18.85
1935	13.55	5.29*	18.84
1936	14.10	5.35*	19.45
1937	14.59	5.40*	19.99
1938	14.07	5.44*	19.51
1939	13.31	5.44*	18.75
1940	12.75	5.66*	18.41

* Including the Federal tax of one cent which became effective June 21, 1932. On June 17, 1933 it was increased to 1½ cents, and on Jan. 1, 1934 it was reduced to 1 cent. July 1, 1940 it was again increased to 1½ cents per gallon.

† Courtesy American Petroleum Institute.



Motorcycle and Trailer Registrations

(As of December 31, 1940 and 1939.)

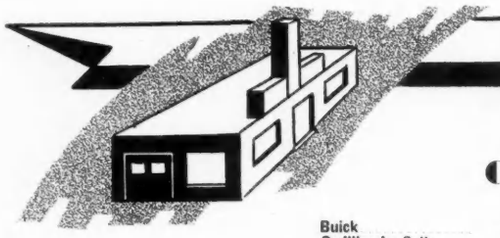
	Motorcycles		Trailers and Semi-Trailers	
	1940	1939	1940	1939
Alabama	975	1,013	4,625	4,574
Arizona	490	440	4,925	4,628
Arkansas	625	549	11,000	10,707
California	15,876	13,271	167,917	155,316
Colorado	1,379	1,355	1,703	1,574
Connecticut	1,934	2,008	6,012	5,951
Delaware	295	280	3,339	3,047
District of Columbia	700	642	950	788
Florida	1,700	1,630	20,000	18,793
Georgia	1,802	1,473	15,009	13,617
Idaho	649	612	21,953	21,513
Illinois	4,679	6,525	29,349	24,966
Indiana	5,250	5,192	72,000	71,584
Iowa	2,867	2,753	95,932	(1) 98,292
Kansas	1,297	1,251	5,588	5,795
Kentucky	1,200	1,181		
Louisiana	1,445	1,264	15,204	13,673
Maine	796	796	11,000	(2) 10,658
Maryland	1,847	1,605	5,520	4,641
Massachusetts	973	712	16,212	14,585
Michigan	4,774	4,619	161,017	154,262
Minnesota	2,437	2,324	90,168	42,175
Mississippi	409	409	5,073	4,149
Missouri	2,421	2,299	38,632	34,317
Montana	534	503	6,171	4,195
Nebraska	1,250	1,244	44,000	43,473
Nevada	139	139	1,510	1,361
New Hampshire	760	817	6,096	5,708
New Jersey	4,886	4,822	8,089	7,679
New Mexico	456	379	3,129	2,762
New York	10,846	11,852	51,251	46,845
North Carolina	1,900	1,797	45,000	44,882
North Dakota	269	284	1,162	984
Ohio	11,000	8,935	135,000	134,174
Oklahoma	1,250	1,142	7,589	14,757
Oregon	1,833	1,693	(3)	(3)
Pennsylvania	11,125	11,238	33,197	30,738
Rhode Island	839	730	1,130	686
South Carolina	996	929	3,860	5,598
South Dakota	469	456	23,391	21,821
Tennessee	1,800	1,758	(3)	(3)
Texas	4,774	4,562	55,666	54,514
Utah	575	486	636	558
Vermont	433	482	2,315	2,026
Virginia	2,181	2,079	12,244	9,877
Washington	2,400	2,171	23,400	20,882
West Virginia	1,314	1,208	3,621	3,382
Wisconsin	3,600	3,419	5,800	5,783
Wyoming	312	291	10,349	10,795
Total	122,761	117,619	1,287,734	1,193,085

(1)—Includes 68,985 light trailers registered without charge.
(2)—Includes light trailers and commercial semi-trailers. Full trailers included with trucks.
(3)—Included with trucks.

Highway Motor-Fuel Usage by States*

	Gallons		Per Cent Increase	Per Cent of Total	
	1940†	1939		1940	1939
Alabama	248,914,000	231,947,000	7.3	1.13	1.12
Arizona	99,353,000	93,107,000	6.7	.45	.45
Arkansas	177,333,000	168,800,000	5.1	.80	.81
California	1,770,943,000	1,688,317,000	4.9	8.02	8.14
Colorado	211,921,000	200,713,000	5.6	.96	.97
Connecticut	359,167,000	337,665,000	6.4	1.63	1.63
Delaware	59,226,000	55,101,000	7.5	.27	.27
Dist. of Col.	162,953,000	146,213,000	11.4	.74	.71
Florida	378,144,000	339,523,000	11.4	1.71	1.64
Georgia	373,865,000	339,877,000	10.0	1.69	1.64
Idaho	97,832,000	91,343,000	7.1	.44	.44
Illinois	1,429,541,000	1,337,895,000	6.8	6.47	6.45
Indiana	664,795,000	599,379,000	10.9	3.01	2.89
Iowa	494,308,000	473,176,000	4.5	2.24	2.28
Kansas	357,238,000	336,807,000	6.1	1.62	1.62
Kentucky	283,670,000	267,507,000	6.0	1.28	1.29
Louisiana	245,804,000	233,424,000	5.7	1.12	1.13
Maine	150,060,000	143,103,000	4.9	.68	.69
Maryland	292,980,000	271,938,000	7.7	1.33	1.31
Massachusetts	712,274,000	687,616,000	3.6	3.23	3.32
Michigan	1,113,197,000	1,021,694,000	8.9	5.05	4.93
Minnesota	502,139,000	471,882,000	6.4	2.27	2.28
Mississippi	200,883,000	191,363,000	5.0	.91	.92
Missouri	663,967,000	625,882,000	6.1	3.01	3.02
Montana	113,269,000	103,906,000	9.0	.51	.51
Nebraska	213,235,000	211,375,000	0.9	.97	1.02
Nevada	35,582,000	35,583,000		.16	.17
New Hampshire	91,838,000	89,259,000	2.9	.42	.43
New Jersey	866,111,000	820,352,000	5.6	3.92	3.96
New Mexico	96,518,000	89,124,000	8.3	.44	.43
New York	1,874,869,000	1,806,041,000	3.8	8.49	8.71
North Carolina	440,075,000	413,573,000	6.4	1.99	1.99
North Dakota	97,983,000	83,678,000	17.1	.44	.40
Ohio	1,326,340,000	1,234,000,000	7.5	6.01	5.95
Oklahoma	384,539,000	369,582,000	4.0	1.74	1.78
Oregon	234,176,000	218,102,000	7.4	1.06	1.05
Pennsylvania	1,517,463,000	1,422,004,000	6.7	6.88	6.86
Rhode Island	132,995,000	127,714,000	4.1	.60	.62
South Carolina	219,198,000	199,422,000	9.9	.99	.96
South Dakota	114,320,000	104,624,000	9.3	.52	.50
Tennessee	304,695,000	268,102,000	13.6	1.38	1.29
Texas	1,215,660,000	1,146,784,000	6.1	5.51	5.53
Utah	102,400,000	94,482,000	8.4	.46	.46
Vermont	68,821,000	65,948,000	4.4	.31	.32
Virginia	397,887,000	365,722,000	8.8	1.80	1.76
Washington	355,815,000	327,940,000	8.5	1.61	1.58
West Virginia	229,413,000	213,281,000	7.6	1.04	1.03
Wisconsin	532,992,000	510,822,000	4.3	2.41	2.46
Wyoming	62,038,000	59,428,000	4.5	.28	.29
Total	22,079,789,000	20,735,120,000	6.5	100.00	100.00

* Federal Works Agency—Public Roads Administration. Includes Federal, State, County and Municipal Highway usage.
† Estimated.



CENSUS OF

Car Representations By Makes—By Years *

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
Buick	3,241	3,003	2,608	2,472	2,273	2,303	2,465	2,516	27,50	2,657	2,572	2,491
Cadillac-La Salle	722	700	654	602	563	541	649	648	803	695	710	694
Chevrolet	9,553	9,558	9,412	9,039	8,885	8,578	8,667	8,776	8,752	8,406	8,100	7,962
Chrysler	3,337	3,007	3,454	2,999	3,511	4,360	4,309	4,097	3,837	3,383	3,276	3,328
De Soto	1,133	1,369	1,234	1,252	1,359	1,880	3,406	2,888	2,926	2,688	2,512	2,469
Dodge	2,994	2,842	2,663	2,722	2,772	3,297	3,772	4,087	4,380	4,113	3,959	3,733
Ford	8,598	8,833	8,735	8,280	7,480	7,388	7,948	8,301	8,245	7,825	7,404	7,158
Graham	1,751	1,469	1,206	1,079	920	782	1,120	958	877	611	460	
Hudson	3,488	2,863	2,270	1,761	1,842	2,641	3,023	3,263	3,390	2,681	2,436	2,667
Hupmobile	1,296	1,084	991	854	699	763	771	.....	302	191		
Lincoln-Zephyr	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,695	2,211	2,356
Mercury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,116	3,655
Nash	2,123	1,884	1,677	1,430	1,201	1,283	1,400	1,314	1,753	1,583	1,756	1,775
Oldsmobile	1,668	1,592	1,426	1,351	1,418	1,611	2,227	2,454	2,588	2,493	2,424	2,449
Packard	766	721	682	624	540	496	843	1,128	1,283	1,098	1,031	1,131
Plymouth	.....	7,218	7,351	6,276	7,642	9,537	11,487	11,072	11,143	10,184	9,747	9,530
Pontiac	4,545	3,435	2,887	2,503	2,336	2,314	2,791	3,413	4,006	3,411	3,439	3,370
Studebaker	2,242	1,971	1,999	1,927	1,733	1,986	1,832	2,080	2,335	1,873	2,480	3,316
Willys-Overland	4,751	3,783	2,904	2,739	.....	.....	.....	580	1,476	1,143	913	1,584
Total	52,218	55,332	52,153	47,910	45,174	49,750	56,710	57,575	60,846	56,680	57,546	59,668
Miscellaneous	10,836	7,409	7,020	5,527	4,854	3,852	3,046	1,779	2,289	366	488	628
Total Representations	63,054	62,741	59,173	53,437	50,028	53,602	59,756	59,354	63,135	57,046	58,034	60,296

* Direct Mail Division—Chilton Company, as of January 1, 1941.

Note—The term "Passenger Car Representation" refers to retail outlets of any given make. A dealer organization often handles more than one make of passenger car.

1940 State Taxes—$40 per Vehicle

STATE	State Tax per Gallon (Cents)	State Gasoline Tax Receipts			State Registration Fees			Total State Tax Receipts from Gasoline and Registration Fees		State Taxes per Motor Vehicle	
		1940	1939	Per Cent Change	1940	1939	Per Cent Change	1940	1939	1940	1939
Alabama	6	$15,451,000	$14,415,000	+ 7.1	$3,592,000	$4,947,000	−27.2	$19,043,000	$19,362,000	$59.00	$63.01
Arizona	5	4,600,000	4,445,000	+ 3.8	1,150,000	1,134,000	+ 1.3	5,750,000	5,579,000	42.63	42.47
Arkansas	6½	11,013,000	10,647,000	+ 3.3	3,270,000	3,140,000	+ 4.1	14,283,000	13,787,000	56.48	57.27
California	3	51,354,000	49,795,000	+ 3.0	14,678,000	24,646,000	−40.4	66,032,000	74,441,000	24.44	28.57
Colorado	4	8,209,000	7,751,000	+ 5.9	2,566,000	2,879,000	−11.0	10,775,000	10,630,000	30.60	30.94
Connecticut	3	10,825,000	9,910,000	+ 9.2	7,086,000	6,738,000	+ 5.1	17,911,000	16,648,000	36.86	36.72
Delaware	4	2,322,000	2,143,000	+ 8.1	1,130,000	1,313,000	−14.0	3,452,000	3,456,000	49.00	50.82
District of Columbia	2	2,800,000	2,784,000	+ 0.7	1,900,000	1,851,000	+ 2.8	4,700,000	4,635,000	26.16	28.14
Florida	7	26,918,000	24,323,000	+10.7	7,750,000	7,096,000	+ 9.2	34,668,000	31,419,000	69.96	68.71
Georgia	6	22,802,000	21,054,000	+ 8.6	2,044,000	2,620,000	−22.0	24,846,000	23,674,000	48.89	49.92
Idaho	5	4,700,000	4,467,000	+ 5.1	1,234,000	1,399,000	−11.7	5,934,000	5,866,000	36.46	38.34
Illinois	3	41,361,000	39,000,000	+ 5.9	24,068,000	24,352,000	− 1.0	65,429,000	63,352,000	33.78	34.06
Indiana	4	25,484,000	23,825,000	+ 7.0	11,000,000	10,001,000	+10.0	36,484,000	33,826,000	36.36	35.46
Iowa	3	14,535,000	13,971,000	+ 4.0	13,077,000	12,624,000	+ 3.0	27,612,000	26,595,000	34.92	34.84
Kansas	3	11,000,000	10,023,000	+10.0	3,919,000	4,363,000	−10.2	14,919,000	14,386,000	25.60	25.04
Kentucky	5	14,717,000	13,834,000	+ 6.2	3,539,000	4,960,000	−28.8	18,256,000	18,794,000	40.19	42.95
Louisiana	7	18,581,000	17,381,000	+ 7.0	5,464,000	5,309,000	+ 3.0	24,045,000	22,690,000	63.56	64.18
Maine	4	6,038,000	5,722,000	+ 5.5	3,900,000	3,788,000	+ 3.0	9,938,000	9,510,000	49.14	47.78
Maryland	4	11,448,000	10,638,000	+ 7.8	5,441,000	5,538,000	− 1.7	16,889,000	16,176,000	37.84	38.22
Massachusetts	3	21,000,000	20,512,000	+ 2.5	7,367,000	7,028,000	+ 5.0	28,367,000	27,540,000	31.36	31.55
Michigan	3	32,393,000	29,830,000	+ 8.4	23,957,000	22,119,000	+ 8.1	56,350,000	51,949,000	47.15	46.30
Minnesota	3	18,346,000	18,646,000	− 1.6	9,903,000	9,884,000	+ 0.2	28,249,000	28,530,000	32.41	33.97
Mississippi	6	11,500,000	11,309,000	+ 1.9	2,600,000	2,567,000	+ 1.2	14,100,000	13,876,000	56.46	56.84
Missouri	2	13,300,000	12,096,000	+10.9	10,800,000	10,226,000	+ 5.8	24,100,000	22,322,000	26.15	25.44
Montana	5	5,094,000	4,800,000	+ 6.0	1,700,000	1,634,000	+ 4.0	6,794,000	6,434,000	35.56	35.68
Nebraska	5	12,000,000	11,481,000	+ 4.7	2,800,000	2,683,000	+ 4.5	14,800,000	14,164,000	35.88	34.47
Nevada	4	1,489,000	1,336,000	+11.3	312,000	286,000	+ 9.0	1,801,000	1,622,000	54.44	54.73
New Hampshire	4	2,894,000	3,508,000	−17.5	3,071,000	2,962,000	+ 3.8	5,965,000	6,470,000	45.75	50.75
New Jersey	3	24,500,000	23,006,000	+ 6.5	22,563,000	21,312,000	+ 5.7	47,063,000	44,318,000	43.74	43.46
New Mexico	5	4,676,000	4,295,000	+ 9.0	1,992,000	1,909,000	+ 4.3	6,668,000	6,204,000	52.64	51.00
New York	4	73,056,000	69,693,000	+ 4.9	55,393,000	48,432,000	+14.4	128,449,000	118,125,000	47.25	44.02
North Carolina	6	25,000,000	24,532,000	+ 2.0	8,500,000	8,163,000	+ 4.1	33,500,000	32,695,000	56.64	58.42
North Dakota	4	3,412,000	2,648,000	+29.0	1,650,000	1,619,000	+ 2.0	5,062,000	4,267,000	27.67	24.09
Ohio	4	51,000,000	50,466,000	+ 1.1	29,000,000	28,625,000	+ 1.3	80,000,000	79,091,000	41.32	41.91
Oklahoma	4	14,747,000	14,206,000	+ 3.9	7,628,000	6,046,000	+26.2	22,375,000	20,252,000	39.02	36.41
Oregon	5	11,420,000	10,591,000	+ 8.0	3,316,000	3,469,000	+ 4.4	14,736,000	14,060,000	37.44	38.06
Pennsylvania	4	61,300,000	59,584,000	+ 3.0	37,995,000	36,563,000	+ 4.0	99,295,000	96,147,000	46.65	45.80
Rhode Island	3	3,947,000	4,027,000	− 2.0	3,093,000	2,929,000	+ 5.4	7,040,000	6,956,000	38.82	39.73
South Carolina	6	15,439,000	12,297,000	+25.5	1,974,000	1,915,000	+ 3.0	17,413,000	14,212,000	55.74	47.26
South Dakota	4	4,453,000	3,956,000	+12.8	1,900,000	2,165,000	−12.1	6,353,000	6,121,000	32.48	32.35
Tennessee	7	21,101,000	18,756,000	+12.5	5,500,000	5,443,000	+ 1.1	26,601,000	24,199,000	63.12	57.07
Texas	4	46,342,000	45,189,000	+ 2.4	21,581,000	21,194,000	+ 2.1	67,923,000	66,383,000	40.09	41.03
Utah	4	4,056,000	3,735,000	+ 8.6	1,126,000	1,176,000	− 4.1	5,182,000	4,911,000	36.65	31.58
Vermont	4	2,797,000	2,679,000	+ 4.2	2,626,000	2,490,000	+ 5.5	5,423,000	5,169,000	57.91	56.98
Virginia	5	19,387,000	17,831,000	+ 8.9	7,006,000	6,847,000	+ 2.3	26,393,000	24,678,000	53.97	54.50
Washington	5	16,500,000	15,994,000	+ 3.1	4,700,000	4,560,000	+ 3.0	21,200,000	20,554,000	37.53	38.37
West Virginia	5	10,942,000	10,409,000	+ 5.2	6,200,000	5,974,000	+ 4.0	17,142,000	16,383,000	58.31	57.24
Wisconsin	4	21,000,000	20,271,000	+ 3.5	13,500,000	12,954,000	+ 4.2	34,500,000	33,225,000	38.36	39.32
Wyoming	4	3,200,000	2,622,000	+22.1	604,000	622,000	− 3.0	3,804,000	3,244,000	44.20	38.89
Total		$860,449,000	$816,433,000	+ 5.5	$417,165,000	$412,494,000	+ 1.0	$1,277,614,000	$1,228,927,000	$40.59†	$40.56†

† U. S. Average.

CAR DEALERS

Car Dealer Representations By Makes—By Population Groups *

CAR MAKE	Population Division A 0-1,000	B 1,000-2,500	C 2,500-5,000	D 5000-10,000	E 10,000-25,000	F 25,000-50,000	G 50,000-100,000	H Over 100,000	Total Dealer Representation
Buick	244	448	466	471	440	153	94	175	2,491
Cadillac-La Salle	17	32	66	102	200	105	74	98	694
Chevrolet	2,839	2,057	1,070	699	556	189	131	421	7,962
Chrysler	589	686	540	476	461	174	95	307	3,328
De Soto	390	382	353	352	407	167	103	315	2,469
Dodge	677	792	641	541	497	171	95	319	3,733
Ford	2,245	1,913	992	668	540	190	132	478	7,158
Hudson	432	408	377	366	405	164	126	389	2,667
Lincoln-Zephyr	355	439	349	323	336	138	91	325	2,356
Mercury	783	846	562	440	394	155	105	370	3,655
Nash	200	230	232	272	325	144	97	275	1,775
Oldsmobile	224	462	464	428	393	157	93	228	2,449
Packard	43	70	150	200	274	143	75	176	1,131
Plymouth	1,656	1,860	1,534	1,369	1,365	512	293	941	9,530
Pontiac	476	766	613	502	453	174	102	284	3,370
Studebaker	594	584	492	461	494	194	119	378	3,316
Willys	262	237	182	194	249	127	79	254	1,584
Miscellaneous	58	45	59	63	100	68	57	178	628
Summary	12,084	12,257	9,142	7,927	7,889	3,125	1,961	5,911	60,296
Per Cent of Total—1941	20.04%	20.33%	15.16%	13.15%	13.08%	5.18%	3.26%	9.80%	100.00%
Per Cent of Total—1940	20.73%	20.08%	15.09%	12.84%	13.11%	5.14%	3.99%	9.62%	100.00%

Direct Mail Division—Chilton Company, as of January 1, 1941.

Car Dealer Representations by States, by Makes*

STATES	Buick	Cadillac-La Salle	Chevrolet	Chrysler	De Soto	Dodge	Ford	Hudson	Lincoln-Zephyr	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willys	Miscellaneous	Total
Alabama	19	6	100	36	18	32	89	24	13	13	9	16	7	86	22	28	21	5	544
Arizona	13	6	31	17	13	20	27	9	8	9	14	10	5	50	14	28	6	5	285
Arkansas	13	2	86	25	14	32	86	14	25	34	5	18	8	71	29	25	7		494
California	149	53	295	155	137	193	309	123	288	289	78	152	85	495	157	186	83	52	3,269
Colorado	32	6	90	46	20	38	90	35	17	52	24	22	9	104	36	41	15	7	684
Connecticut	36	17	82	51	48	55	90	41	44	53	32	37	22	154	57	49	34	21	912
Delaware	7	3	16	4	5	8	13	1	7	6	3	7	2	17	7	7	2	1	116
District of Columbia	2	1	9	7	8	7	14	11	13	12	4	4	7	22	4	3	6	5	139
Florida	25	16	93	37	22	39	98	29	32	21	18	28	30	98	47	44	26	11	714
Georgia	29	6	148	49	21	58	141	25	16	21	10	24	12	128	39	35	18	4	784
Idaho	17	2	72	22	23	35	56	37	17	30	20	27	5	80	22	30	14	5	514
Illinois	200	37	433	177	135	204	417	174	96	140	150	143	75	516	199	224	99	36	3,455
Indiana	92	24	213	99	90	112	181	114	73	123	60	83	35	301	105	124	34	12	1,875
Iowa	104	12	385	118	69	120	286	91	64	159	44	78	26	307	115	105	48	13	2,144
Kansas	60	6	237	76	58	87	216	73	39	143	43	62	15	221	90	65	29	7	1,527
Kentucky	47	9	115	59	26	66	118	28	26	78	16	49	16	151	59	45	17	6	930
Louisiana	18	5	81	33	17	33	82	23	16	26	9	20	10	83	28	29	18	3	534
Maine	15	7	73	30	19	38	65	33	11	27	22	16	9	87	34	26	34	11	557
Maryland	24	10	66	48	40	52	77	28	44	47	16	31	17	140	34	40	27	9	750
Massachusetts	57	33	175	92	92	110	148	79	33	99	63	85	46	294	113	86	30	20	1,655
Michigan	122	31	347	126	95	168	314	161	133	198	84	115	50	389	175	141	77	46	2,772
Minnesota	92	7	331	131	81	133	277	82	12	17	74	60	20	345	96	125	45	15	1,943
Mississippi	16	4	106	33	18	36	91	19	14	16	10	16	9	87	34	35	11		555
Missouri	44	9	257	71	74	90	187	42	34	63	45	46	20	235	70	111	44	8	1,451
Montana	19	5	85	37	13	41	79	26	6	23	16	15	7	91	23	41	11		538
Nebraska	42	2	200	73	36	57	162	35	21	104	15	23	7	166	48	64	10	3	1,068
Nevada	12	1	19	8	7	12	23	6	8	8	8	5	5	27	12	7	7	8	183
New Hampshire	16	7	55	19	14	23	44	15	4	25	7	13	7	56	20	16	9	4	354
New Jersey	67	36	151	95	84	104	148	63	118	121	62	77	30	233	91	92	55	25	1,702
New Mexico	14	5	42	17	8	17	40	7	16	18	8	18	5	42	17	10	1	2	287
New York	175	75	440	249	174	297	410	198	253	310	121	234	107	720	277	222	143	57	4,462
North Carolina	47	15	148	63	23	62	152	37	19	15	15	34	15	148	67	54	22	3	939
North Dakota	23	4	133	47	28	47	128	36	6	37	13	20	5	122	20	56	22	4	751
Ohio	144	44	419	181	175	202	352	214	134	172	136	149	93	558	196	184	94	44	3,481
Oklahoma	43	9	176	43	33	66	168	29	49	95	15	35	11	142	77	39	6	3	1,039
Oregon	25	9	99	34	32	43	71	28	39	55	22	33	11	109	46	27	27	9	719
Pennsylvania	187	59	479	267	228	287	415	229	173	177	173	202	110	782	253	289	153	63	4,526
Rhode Island	9	4	21	19	14	15	18	10	7	13	11	12	8	48	13	20	7	3	252
South Carolina	25	5	89	29	16	33	87	18	12	8	7	21	12	78	32	31	11		514
South Dakota	16	2	112	43	25	36	111	12	9	85	10	16	5	104	14	27	13	2	642
Tennessee	19	5	105	34	31	52	95	18	17	55	8	31	10	117	36	40	14	4	691
Texas	102	29	431	185	107	174	378	110	90	157	47	112	36	466	148	123	53	16	2,754
Utah	10	5	34	16	19	17	37	15	9	20	8	12	3	52	10	21	15	4	307
Vermont	12	5	36	13	12	21	33	15	15	25	10	14	12	46	18	16	11	8	322
Virginia	33	13	144	65	32	71	149	26	40	47	11	33	22	168	81	39	16	11	1,001
Washington	38	6	129	53	56	75	130	44	33	77	30	49	22	184	65	61	32	10	1,094
West Virginia	30	10	96	44	36	49	77	38	27	53	17	31	13	129	41	39	30	8	768
Wisconsin	135	23	438	133	110	143	352	125	172	255	142	99	43	386	159	143	67	34	2,959
Wyoming	15	4	40	19	13	23	37	17	14	24	9	13	2	55	20	24	10	1	340
TOTAL	2,491	694	7,962	3,328	2,469	3,733	7,158	2,667	2,356	3,655	1,775	2,449	1,131	9,530	3,370	3,316	1,584	628	60,296

* Direct Mail Division—Chilton Company, as of January 1, 1941.

MARKETING

Registrations, Sales and Retail Outlet Data

ZONE	Total Motor Vehicle Registrations	Per Cent of Total Registrations	New Car Registrations	Per Cent of Total New Car Regist.	Passenger Car Dealers *	Per Cent of Total Car Dealers	New Car Registrations per Dealer	Total Repair Shops *	Per Cent of Total Repair Shops	Registrations per Repair Shop	Number of Wholesalers *	Per Cent of Total Wholesalers	Registrations per Wholesaler	All Retail Outlets *	Per Cent of Total Retail Outlets	Registrations per Retail Outlet
New England	1,997,879	6.35	228,414	6.69	2,690	6.75	85	5,819	6.65	343	467	7.11	4,278	6,348	6.66	214
Middle Atlantic	5,922,389	18.83	722,179	21.14	6,858	17.23	105	17,717	20.26	334	1,169	17.78	5,066	19,222	20.17	308
East North Central	6,970,048	22.15	902,506	26.42	9,381	23.55	96	18,951	21.67	368	1,390	21.14	5,014	20,459	21.47	341
West North Central	3,956,831	12.57	336,358	9.85	6,642	16.67	51	13,439	15.37	294	799	12.15	4,952	14,507	15.22	273
South Atlantic	3,387,616	10.76	374,131	10.95	3,911	9.82	96	7,093	8.11	477	690	10.49	4,909	7,795	8.18	434
East South Central	1,448,068	4.60	151,951	4.45	1,858	4.66	82	3,110	3.56	465	367	5.58	3,945	3,523	3.70	411
West South Central	2,893,287	9.21	265,611	7.78	3,322	8.34	80	7,318	8.37	396	658	10.01	4,404	7,977	8.37	363
Mountain	1,227,886	3.90	103,006	3.01	2,049	5.14	50	3,676	4.20	334	292	4.44	4,205	4,133	4.34	297
Pacific	3,659,883	11.63	331,749	9.71	3,122	7.84	106	10,329	11.81	354	743	11.30	4,925	11,332	11.89	323
Total	31,468,887	100.00	3,415,905	100.00	39,833	100.00	† 86	87,452	100.00	† 359	6,575	100.00	† 4,786	95,296	100.00	† 330

*—Direct Mail Division, Chilton Company. †—U. S. Average.

Automotive Sales Outlets by States*

STATE	Total Registered Motor Vehicles 1940	WHOLESALERS		DEALERS					REPAIR SHOPS			All Retail Outlets Duplications Eliminated	Motor Vehicles Per Retail Outlet	All Truck Fleets (8 or More Trucks)
		Number of Wholesalers	Motor Vehicles Per Wholesaler	Passenger Car Dealers	Exclusive Truck Dealers	Total Truck Dealers	Total Car and Truck Dealers	Motor Vehicles Per Car and Truck Dealers	Car Dealer Service Stations	Independent Repair Shops	Total Repair Shops			
Alabama	322,812	84	3,843	393	14	228	407	793	372	283	655	768	492	221
Arizona	134,850	32	4,214	173	11	93	184	732	176	168	344	341	395	81
Arkansas	252,844	87	2,906	374	19	249	393	643	368	319	687	714	354	122
California	2,701,505	525	5,145	1,934	109	1,258	2,043	1,322	1,743	5,311	7,054	7,675	351	1,584
Colorado	352,108	73	4,823	452	37	309	489	720	447	486	933	1,087	323	259
Connecticut	485,907	103	4,717	597	26	345	623	779	593	694	1,287	1,465	331	508
Delaware	70,454	14	5,032	68	6	44	74	952	69	102	171	172	409	87
District of Columbia	179,600	26	6,907	84	5	36	89	2,017	82	139	221	257	698	209
Florida	495,500	110	4,504	474	32	281	506	979	457	495	952	1,095	452	395
Georgia	508,105	103	4,933	559	19	371	578	879	531	290	821	1,001	507	332
Idaho	162,742	32	5,085	347	14	238	361	450	340	181	521	572	344	48
Illinois	1,936,401	414	4,677	2,477	98	1,526	2,575	752	2,356	2,929	5,285	5,652	342	1,810
Indiana	1,003,350	208	4,823	1,230	32	692	1,262	795	1,169	1,253	2,422	2,450	409	773
Iowa	790,551	169	4,677	1,433	111	1,018	1,544	512	1,328	1,288	2,616	2,997	263	374
Kansas	582,673	137	4,253	1,058	41	684	1,099	530	1,015	932	1,947	1,972	295	276
Kentucky	454,151	105	4,325	600	22	423	622	730	594	456	1,050	1,164	390	257
Louisiana	378,280	75	5,043	382	13	249	395	957	359	282	641	721	524	416
Maine	202,200	49	4,126	397	14	241	411	491	373	466	839	858	235	119
Maryland	446,221	84	5,312	479	11	208	490	910	468	520	988	1,031	432	409
Massachusetts	904,423	234	3,865	1,124	30	483	1,154	783	1,087	1,238	2,325	2,525	358	1,244
Michigan	1,195,034	245	4,877	1,775	88	1,189	1,863	641	1,742	1,851	3,593	4,013	297	1,248
Minnesota	871,351	127	6,861	1,438	42	787	1,480	589	1,376	1,767	3,143	3,333	261	486
Mississippi	249,705	70	3,567	400	31	276	431	579	409	192	601	628	397	124
Missouri	921,269	208	4,429	1,055	44	738	1,099	838	1,033	1,468	2,501	2,659	346	711
Montana	191,032	47	4,064	380	35	288	415	460	381	269	650	694	275	103
Nebraska	412,480	96	4,296	713	32	537	745	553	692	805	1,497	1,631	253	190
Nevada	33,078	10	4,408	111	4	92	115	287	109	94	203	225	147	27
New Hampshire	130,379	25	5,215	233	13	157	246	529	217	271	488	529	246	75
New Jersey	1,075,782	192	5,603	1,045	57	528	1,102	976	1,009	1,837	2,846	3,043	353	1,135
New Mexico	126,665	32	3,958	178	11	119	189	670	153	140	293	359	352	41
New York	2,718,323	541	5,024	2,756	182	1,713	2,938	925	2,689	5,230	7,919	8,626	315	2,479
North Carolina	591,450	130	4,549	666	23	361	689	858	668	497	1,165	1,278	462	325
North Dakota	182,922	30	6,097	530	21	347	551	331	530	482	1,012	1,087	168	50
Ohio	1,936,000	379	5,108	2,280	64	1,269	2,344	825	2,114	2,448	4,562	4,968	389	1,563
Oklahoma	573,282	134	4,278	685	59	513	744	770	708	780	1,488	1,736	330	289
Oregon	393,578	83	4,741	457	20	308	477	825	437	890	1,327	1,490	264	228
Pennsylvania	2,128,284	436	4,881	3,057	131	1,862	3,188	667	2,976	3,976	6,952	7,553	281	2,021
Rhode Island	181,325	29	6,252	156	4	70	160	1,133	152	229	381	433	418	223
South Carolina	312,351	57	5,479	363	15	201	378	826	341	232	573	585	533	191
South Dakota	195,585	32	6,112	415	24	317	439	445	388	335	723	828	236	53
Tennessee	421,400	108	3,901	465	19	308	484	870	413	391	804	963	437	348
Texas	1,693,881	362	4,679	1,881	188	1,349	2,069	818	1,844	2,658	4,502	4,806	352	945
Utah	141,365	42	3,365	199	5	147	204	692	181	228	409	471	300	129
Vermont	93,645	27	3,468	183	11	151	194	482	168	331	499	538	175	47
Virginia	488,972	86	5,865	696	19	253	715	683	663	687	1,350	1,445	338	353
Washington	564,800	135	4,183	731	49	489	780	724	677	1,271	1,948	2,167	260	419
West Virginia	294,963	80	3,687	522	8	317	530	556	499	363	852	931	316	269
Wisconsin	899,263	144	6,244	1,619	83	1,188	1,702	528	1,569	1,520	3,089	3,376	266	629
Wyoming	86,046	24	3,585	209	11	142	220	391	189	134	323	384	224	46
Total	31,468,887	6,575	†4,786	39,833	1,957	24,992	41,790	†753	38,244	49,208	87,452	95,296	†330	24,271

† U. S. Average. * Direct Mail Division, Chilton Company.

DATA

Automotive-Retail Census of Distribution—1939‡

STATE	MOTOR VEHICLE DEALERS—NEW AND TRADE-IN			USED-CAR DEALERS			ACCESSORY, TIRE, BATTERY DEALERS			OTHER AUTOMOTIVE †			TOTAL AUTOMOTIVE			FILLING STATIONS	
	No. of Stores	Sales (add 000)	% of State Automotive Sales	No. of Stores	Sales (add 000)	% of State Automotive Sales Total	No. of Stores	Sales (add 000)	% of State Automotive Sales Total	No. of Stores	Sales (add 000)	% of State Automotive Sales Total	No. of Stores	Sales (add 000)	Per Cent of Total U. S. Automotive Sales	No. of Stores	Sales (add 000)
Alabama	357	$64,335	89.90	42	$746	1.04	193	$6,339	8.86	11	$145	.20	603	$71,565	1.29	3,750	$34,249
Arizona	126	20,815	88.60	33	286	1.22	59	2,392	10.18	2			220	23,493	.42	1,196	15,484
Arkansas	335	47,324	90.36	34	852	1.63	182	4,198	8.01	2			553	52,374	.94	3,037	26,061
California	1,766	365,997	81.15	979	32,957	7.31	1,550	48,502	10.76	118	3,535	.78	4,413	450,991	8.13	15,218	242,183
Colorado	414	54,935	86.73	136	2,358	3.72	273	5,921	9.35	9	124	.20	832	63,338	1.14	3,109	35,106
Connecticut	441	73,481	84.96	157	2,457	2.84	281	10,314	11.92	19	239	.28	898	86,491	1.56	2,930	42,238
Delaware	64	14,451	90.29	16	254	1.59	37	1,300	8.12	2			119	16,005	.29	640	8,390
Dist. of Col.	68	40,478	88.28	16	819	1.79	56	4,231	9.23	5	322	.70	145	45,850	.83	495	18,163
Florida	439	84,447	82.45	133	6,211	6.06	242	11,118	10.85	27	647	.64	841	102,423	1.85	4,653	51,064
Georgia	535	81,381	88.26	96	1,682	1.83	274	8,828	9.57	11	311	.34	916	92,202	1.66	5,054	49,350
Idaho	234	28,364	91.90	16	294	.95	82	2,171	7.03	4	38	.12	336	30,867	.56	1,361	16,443
Illinois	2,092	308,126	89.05	334	10,284	2.97	1,024	26,546	7.67	52	1,074	.31	3,502	346,030	6.24	12,096	158,143
Indiana	1,165	138,793	86.42	174	3,955	2.46	658	17,451	10.87	34	396	.25	2,031	160,595	2.90	8,252	88,916
Iowa	1,224	109,711	89.05	112	2,301	1.87	664	11,009	8.94	25	170	.14	2,025	123,191	2.22	6,967	72,059
Kansas	838	68,274	85.46	137	1,974	2.47	635	9,591	12.01	10	50	.06	1,620	79,889	1.44	5,726	49,592
Kentucky	529	64,667	88.53	61	1,257	1.73	245	7,056	9.66	4	62	.08	839	73,042	1.32	3,540	33,836
Louisiana	331	62,212	85.27	58	3,678	5.04	173	6,529	8.95	16	537	.74	578	72,956	1.31	2,721	30,781
Maine	304	34,681	90.07	61	967	2.51	143	2,679	6.96	21	179	.46	529	38,506	.69	2,173	21,421
Maryland	376	67,919	87.77	89	2,466	3.19	185	6,697	8.65	11	302	.39	661	77,384	1.40	2,255	30,444
Massachusetts	939	154,780	86.60	166	3,793	2.12	515	19,798	11.08	28	365	.20	1,648	178,736	3.22	5,745	84,500
Michigan	1,493	236,481	85.01	438	17,163	6.17	727	23,152	8.32	69	1,374	.50	2,727	278,170	5.02	10,941	140,975
Minnesota	1,124	113,049	89.80	123	3,589	2.85	435	8,951	7.11	22	308	.24	1,704	125,897	2.27	6,692	78,518
Mississippi	349	44,117	91.81	7	333	.69	163	3,605	7.50	2			521	48,055	.87	2,203	23,674
Missouri	970	129,523	85.56	292	6,986	4.62	693	14,070	9.29	20	799	.53	1,975	151,378	2.73	9,499	82,088
Montana	275	33,949	92.82	15	309	.84	77	2,271	6.21	3	46	.13	370	36,575	.66	1,349	19,685
Nebraska	550	48,817	86.66	63	1,278	2.27	303	6,212	11.03	5	23	.04	921	56,330	1.02	3,561	40,499
Nevada	53	8,250	89.75	4	82	.89	22	860	9.36	2			81	9,192	.17	352	6,253
New Hampshire	199	22,478	89.58	28	471	1.88	78	2,087	8.32	4	56	.22	309	25,092	.45	1,229	13,058
New Jersey	842	159,085	86.61	206	5,883	3.20	532	18,027	9.81	35	695	.38	1,615	183,690	3.31	6,580	85,371
New Mexico	155	21,142	90.16	26	378	1.61	92	1,929	8.23	2			275	23,449	.42	1,292	12,548
New York	2,311	418,304	85.79	583	21,604	4.43	1,441	44,609	9.15	119	3,089	.63	4,454	487,606	8.79	15,652	219,269
North Carolina	647	95,339	89.22	79	1,398	1.31	265	9,970	9.33	8	146	.14	999	106,853	1.93	7,782	65,331
North Dakota	280	24,290	92.16	9	130	.49	163	1,937	7.35	1			453	26,357	.48	1,539	15,093
Ohio	2,097	282,804	86.58	446	12,425	3.80	1,063	30,018	9.20	69	1,388	.42	3,675	326,635	5.89	12,800	169,228
Oklahoma	639	81,741	84.27	212	3,445	3.55	524	11,687	12.05	9	131	.13	1,384	97,004	1.75	6,108	47,066
Oregon	356	62,043	89.43	69	1,739	2.51	159	5,183	7.47	14	413	.59	598	69,378	1.25	2,847	34,642
Pennsylvania	2,455	320,703	89.14	282	5,418	1.51	1,181	32,979	9.17	54	669	.18	3,972	359,769	6.49	14,031	160,927
Rhode Island	145	23,860	81.62	65	1,829	6.26	79	3,465	11.85	4	80	.27	293	29,234	.53	1,116	15,293
South Carolina	342	48,924	87.89	95	2,130	3.82	166	4,570	8.21	5	43	.08	608	55,667	1.00	3,214	27,591
South Dakota	300	23,783	88.41	52	907	3.37	136	2,203	8.19	3	9	.03	491	26,902	.49	2,030	20,173
Tennessee	426	75,800	86.06	64	1,995	2.27	236	10,021	11.38	11	258	.29	737	88,074	1.59	3,422	43,957
Texas	1,672	258,099	82.25	520	14,984	4.78	1,300	40,032	12.76	39	678	.21	3,531	313,793	5.66	15,738	150,127
Utah	163	22,326	88.67	25	493	1.96	59	2,278	9.05	4	81	.32	251	25,178	.45	1,184	16,132
Vermont	155	18,356	93.98	15	124	.64	50	996	5.10	5	55	.28	225	19,531	.35	963	9,508
Virginia	587	77,620	88.72	51	1,878	2.15	194	7,724	8.83	12	271	.30	844	87,493	1.58	5,083	49,625
Washington	536	84,494	87.69	153	2,817	2.92	255	8,242	8.55	41	805	.84	985	96,358	1.74	4,413	56,306
West Virginia	414	46,725	90.77	36	852	1.65	144	3,858	7.49	8	44	.09	602	51,479	.93	2,516	26,398
Wisconsin	1,329	121,596	89.93	154	3,413	2.53	455	9,326	6.90	37	802	.59	1,975	135,137	2.44	5,942	74,175
Wyoming	164	17,124	93.93	18	146	.80	62	961	5.27				244	18,231	.33	862	11,547
Total 1939	33,605	$4,805,993	86.68	6,980	$193,790	3.50	18,525	$523,893*	9.45	1,018	$20,759	.37	60,128	$5,544,435	100.00	241,856	$2,822,481
Total 1935	30,294	$3,725,438	87.94	4,751	$122,204	2.88	14,343	$373,910	8.83	1,071	$15,034	.35	50,459	$4,236,586		197,568	$1,967,714
Total 1929	42,204	$6,266,580	88.97	3,097	$140,932	2.00	22,313	$599,295	8.51	1,765	$36,579	.52	69,379	$7,043,386		121,513	$1,787,423

*—Includes $208,000 which we were unable to separate from "Other Automotive" sales. ‡—Census of Manufactures.
†—"Other Automotive" includes Motor Vehicle-farm implement dealers, Aircraft dealers, and Motorboat-yacht dealers.

Sales of Accessories and Replacement Sales of Motor Vehicle Parts to the United States Market

Census of Manufactures for 1939.

Item	Units Sold 1939
Breaker Points:	
Screws	10,661,306
Arms	12,443,414
Carburetors (new and rebuilt)[1]	896,564
Cylinder Heads	653,623
Cylinder-head gaskets	17,762,626
Engines, rebuilt	201,529
Fan Belts	11,090,840
Fuel Pumps (new and rebuilt)[1]	1,536,572
Hub Caps	4,145,775
Ignition Coils	1,970,131
Light Bulbs (6- and 12-volt)	82,799,688
Mufflers	4,868,258
Pistons:	
Cast Iron	1,653,698
Aluminum	6,979,094
Piston Rings:	
Oil-type	73,159,686
Compression	93,141,916
Not reported by type	4,372,793
Spark Plugs	78,200,527
Springs for motor vehicle support:	
Helical	71,350
Flat-leaf assemblies	1,338,899
Main leaves only	740,763
Storage batteries	12,352,256
Valves (engine)	9,554,001
Radio sets[2]	1,359,876
Heaters[2]	3,216,617

(1)—Data for new units and rebuilt units are combined to avoid disclosing the operations of individual organizations.

(2)—Includes units installed by vehicle manufacturers on cars for U. S. market.

AMERICAN

Line Number	CAR MAKE AND MODEL		Wheelbase (In.)	Overall Length (In.)	Tread (In.) Front	Tread (In.) Rear	Tire Size (In.)	Shipping Weight (Lb.) Lowest Delivered Price 5 Pass., 4-Door Sedan	Lowest Delivered Price 5 Pass., 4-Door Sedan	ENGINE: No. of Cylinders, Bore and Stroke (In.)	Taxable Hp.	Piston Displacement (Cu. In.)	Maximum Brake Hp. at Specified R.P.M.	Maximum Torque (Lb.-Ft.) at Specified R.P.M.	Comp'n Ratio (to 1) Standard	Comp'n Ratio (to 1) Optional	Cylinder Head Material	Comp'n Pressure (Lb.) Pressure	Comp'n Pressure (Lb.) At What R.P.M.	Weight per Cu. In. 5 Pass., 4-Door Sedan ♦	Weight per Hp. 5 Pass., 4-Door Sedan ♦	Hp. per Cu. In.	Displacement †† Factor	Crankshaft † Revolutions per Mile
1	Bantam	65	75	129½	39⅛	42½	4.00/15	1271	$449	4-2.26x3⅛	8.2	50.14	22-3800	35-1800	7.40	No	CI	135	200	35.32	80.50	.44	....	4735
2	Buick-Special	41-40A	118	202½	59⅛	62⅞	6.50/15	3670	1021	8-3⅛x4⅛	30.6	248	115-3500	210-2000	6.50	....	CI	142	1000	16.81	36.26	.46	36.9	3033
3	Buick-Special	41-40B	121	208¾	58⅞	61½	6.50/16	3730	1052	8-3⅛x4⅛	30.6	248.0	115-3500	210-2000	6.50	....	CI	142	1000	17.05	36.78	.46	36.4	3203
4	Buick-Super	41-50	121	211⅞	58⅞	61½	6.50/16	3770	1185	8-3⅛x4⅛	30.6	248.0	125-3800	217-2000	7.00	....	CI	148	1000	17.21	34.16	.50	33.6	3203
5	Buick-Century	41-60	126	213½	59⅛	62⅞	7.00/15	4025	1288	8-3⅛x4⅝	37.8	320.2	165-3800	278-2200	7.00	....	CI	151	1000	14.13	27.42	.52	39.0	2843
6	Buick-Roadmaster	41-70	126	215⅛	59⅛	62⅞	7.00/15	4010	1364	8-3⅛x4⅝	37.8	320.2	165-3800	278-2200	7.00	....	CI	151	1000	14.08	27.33	.52	39.0	2843
7	Buick-Limited	41-90	139	228½	58½	62½	7.50/16	4575	2155	8-3⅛x4⅝	37.8	320.2	165-3800	278-2200	7.00	....	CI	151	1000	15.83	30.72	.52	37.3	2842
8	Cadillac-V8	41-60S	126	217	59	63	7.00/15	4230	2195	8-3½x4½	39.2	346.0	150-3400	283-1700	7.25	....	CI	182	1000	13.67	31.53	.43	39.0	2748
9	Cadillac-V8	41-61	126	215	59	63	7.00/15	4065	1445	8-3½x4½	39.2	346.0	150-3400	283-1700	7.25	....	CI	182	1000	13.19	30.43	.43	40.3	2748
10	Cadillac-V8	41-62	126	216	59	63	7.00/15	4030	1495	8-3½x4½	39.2	346.0	150-3400	283-1700	7.25	....	CI	182	1000	13.09	30.20	.43	40.6	2748
11	Cadillac-V8	41-63	126	215	59	63	7.00/15	4140	1695	8-3½x4½	39.2	346.0	150-3400	283-1700	7.25	....	CI	182	1000	13.41	30.93	.43	39.8	2748
12	Cadillac-V8	41-67	139	228	58½	62½	7.50/16	4555	2595	8-3½x4½	39.2	346.0	150-3400	283-1700	7.25	....	CI	182	1000	14.60	33.70	.43	38.4	2904
13	Cadillac-V8	41-75	136	226⅛	58½	62½	7.50/16	4750	2995	8-3½x4½	39.2	346.0	150-3400	283-1700	7.25	....	CI	182	1000	15.17	35.00	.43	37.0	2904
14	Chevrolet-Master DeLuxe		116	195¾	57⅝	60	6.00/16	3090	795	6-3⅛x3¾	29.4	216.5	90-3300	174-(e)	6.50	No	CI	....	....	16.58	39.88	.42	35.8	3066
15	Chevrolet-Special DeLuxe		116	195¾	57⅝	60	6.00/16	3125	851	6-3⅛x3¾	29.4	216.5	90-3300	174-(e)	6.50	No	CI	....	....	16.74	40.27	.42	35.4	3066
16	Chrysler-Roy. & Windsor	C28	121½	211⅛	57	60⅞	6.25/16	3350	1051	6-3⅜x4½	27.3	241.5	112-3600	190-1200	6.80	7.20	CI°	145	1000	15.94	34.37	.46	34.9	2878
17	Chry.-Sar. & N.Y.	C30N, C30K	127½	217⅛	57⅞	61⅛	7.00/15	3790	1278	8-3¼x4⅞	33.8	323.5	137-3400	255-1600	6.80	....	CI°	155	1000	13.26	31.31	.42	41.6	2850
18	Chrysler-Crown Imperial	C33	145½	230⅛	57½	61⅞	7.50/15	....	2595	8-3¼x4⅞	33.8	323.5	140-3400	260-1600	6.80	....	AI	155	1000	....	....	.43	....	3267
19	Crosley	CB-41	80	120	40	40	4.25/12	975	366	2-3x2½	7.2	35.3	12-4000	20-2800	5.60	No	CI	80	240	41.78	122.91	.34	....	5191
20	De Soto-DeLuxe & Cus.	S8	121½	207¾	57	60⅞	6.25/16	3254	995	6-3⅜x4¼	27.3	228.1	105-3600	178-1200	6.80	7.20	....	150	1000	16.45	35.75	.46	35.6	3026
21	Dodge-DeLuxe & Cus.	D19	119½	202⅛	57	60⅞	6.00/16	3149	920	6-3¼x4¾	25.3	217.8	91-3800	170-1200	6.50	....	....	145	1000	16.75	40.09	.42	37.0	3208
22	Ford-Spec. DeL. & Sup. DeL.		114	194⅛	55¾	58¼	6.00/16	3121	775‡	8-3.06x3.75	30.0	221.0	85-3800	157-2200	6.15	....	CI	140	2400	16.38	42.60	.38	33.3	2810
23	Hudson-DeLuxe & Trav. 6	10	116	196⅛	56⅛	59½	(f)	2900	811	6-3x4⅛	21.6	175.0	92-4000	138-1400	7.25	No	CI	125	125	19.42	36.95	.52	34.8	3508
24	Hudson-Super & Com. 6	11-12	121	201⅛	56⅛	59½	(g)	3050	952	6-3x5	21.6	212.0	102-4000	168-1200	6.50	No	CI	120	125	16.74	34.80	.48	35.4	3066
25	Hudson-Commodore 8	14	121	201⅛	56⅛	59½	6.25/16	3260	1085	8-3x4½	28.8	254.0	128-4200	198-1600	6.50	No	CI	119	125	14.80	29.37	.50	39.6	3033
26	Hudson-Comm. Custom 8	17	128	208⅜	56⅛	59½	6.50/16	3400	1278	8-3x4½	28.8	254.0	128-4200	198-1600	6.50	No	CI	119	125	15.35	30.46	.50	37.8	2992
27	Lincoln-Zephyr & Continental		125	209.82	55¾	60	7.00/16	....	1450‡	12-2.875x3.75	39.6	292.0	120-3500	....	7.00	....	CI	....	....	....	....	.41	....	3135
28	Lincoln-Custom		138	225.25	55¾	60	7.00/16	....	2550‡	12-2.875x3.75	39.6	292.0	120-3500	....	7.00	....	CI	....	....	....	....	.41	....	3135
29	Mercury		118	200.16	55¾	58¼	6.50/16	....	960‡	8-3.187x3.75	32.5	239.0	95-3600	176-2100	6.15	....	CI	145	2200	....	....	.40	....	3135
30	Nash-Amb. 600	4140	112	194	56	59¾	5.50/16	2550	780	6-3⅛x3¾	23.4	172.6	75-3600	136-1200	6.87	No	CI	120	350	17.67	40.66	.43	34.6	3169
31	Nash-Amb. 6	4160	121	200¾	57½	60½	6.25/16	3300	930	6-3⅜x4⅜	27.3	234.8	105-3400	195-1600	6.30	No	CI	125	350	16.18	36.19	.45	36.1	3026
32	Nash-Amb. 8	4180	121	200¾	57	61¼	6.50/16	3465	1051	8-3⅛x4¼	31.2	260.8	115-3400	200-1600	6.30	No	CI	110	350	15.20	34.47	.44	38.1	2992
33	Oldsmobile-Special 6		119	204	58	61½	6.00/16	3230	945	6-3½x4⅛	29.4	238.0	100-3400	190-1400	6.10	....	CI	115	100	15.67	37.30	.42	37.7	3059
34	Oldsmobile-Dynamic 6		125	211	58	61½	6.50/16	3390	1010	6-3½x4⅛	29.4	238.0	100-3400	190-1400	6.10	....	CI	115	100	16.34	38.90	.42	37.2	3130
35	Oldsmobile-Custom 6		125	213	58	61½	7.00/15	3410	1099	6-3½x4⅛	29.4	238.0	100-3400	190-1400	6.10	....	CI	115	100	16.42	39.10	.42	37.0	3135
36	Oldsmobile-Special 8		119	204	58	61½	6.50/16	3360	987	8-3¼x3⅞	33.8	257.0	110-3600	200-2000	6.30	....	CI	107	100	15.01	35.09	.43	38.4	2985
37	Oldsmobile-Dynamic 8		125	211	58	61½	6.50/16	3500	1045	8-3¼x3⅞	33.8	257.0	110-3600	200-2000	6.30	....	CI	107	100	15.56	36.36	.43	39.0	3130
38	Oldsmobile-Custom 8		125	213	58	61½	7.00/15	3500	1135	8-3¼x3⅞	33.8	257.0	110-3600	200-2000	6.30	....	CI	107	100	15.56	36.36	.43	39.0	3135
39	Packard-One Ten	1900	122	201⅛	59⅛	60⅝	6.50/15	3250	1056	6-3½x4¼	29.4	245.0	100-3600	....	6.39	6.71	CI	....	....	15.30	37.50	.41	....	3130
40	Packard-One Twenty	1901	127	206¼	....	60⅝	7.00/15	3510	1261	8-3¼x4¼	33.8	282.0	120-3600	....	6.41	6.85	CI	....	....	14.21	33.41	.42	40.6	2982
41	Packard-Super 8	1903-4-5	127-38-48	(n)	59⅛	(p)	7.00/16	3865	1750	8-3½x4⅝	39.2	356.0	160-3600	....	6.45	6.85	CI	....	....	12.26	27.28	.45	43.8	2768
42	Packard-Cus. Super 8	1906-7-8	127-38-48	(r)	59⅛	(p)	7.00/16	4350	2587	8-3½x4⅝	39.2	356.0	160-3600	....	6.45	6.85	CI	....	....	13.62	30.31	.45	43.8	2687
43	Plymouth	P-11	117	194¾	57	59⅛	6.00/16	2889	780	6-3⅛x4¾	23.4	201.3	87-3800	160-1200	6.70	....	CI	150	1000	16.83	38.95	.43	35.1	3059
44	Plymouth-Spec. DeLuxe	P-12	117	197½	57	59⅛	6.00/16	2959	840	6-3⅛x4¾	23.4	201.3	87-3800	160-1200	6.70	7.25	CI°	150	1000	17.18	39.75	.43	36.1	3278
45	Pontiac-DeLuxe 6	41-25	119	201½	58	61½	6.00/16	3235	921	6-3⅜x4	30.4	239.2	90-3200	175-1400	6.50	7.50	CI	155	1000	15.61	41.50	.38	37.9	3059
46	Pontiac-Streamliner 6	41-26	122	207½	58	61½	6.50/16	3365	980	6-3⅜x4	30.4	239.2	90-3200	175-1400	6.50	7.50	CI	155	1000	16.15	42.94	.38	37.5	3130
47	Pontiac-Custom 6	41-24	122	211½	58	61½	6.50/16	3355	1052	6-3⅜x4	30.4	239.2	90-3200	175-1400	6.50	7.50	CI	155	1000	16.11	42.83	.38	37.5	3130
48	Pontiac-DeLuxe 8	41-27	119	201½	58	61½	6.00/16	3285	946	8-3¼x3¾	33.8	248.9	103-3500	190-2200	6.50	7.50	CI	155	1000	15.20	36.74	.41	38.9	3059
49	Pontiac-Streamliner 8	41-28	122	207½	58	61½	6.50/16	3425	1005	8-3¼x3¾	33.8	248.9	103-3500	190-2200	6.50	7.50	CI	155	1000	15.76	38.10	.41	38.5	3130
50	Pontiac-Custom 8	41-29	122	211½	58	61½	6.50/16	3430	1077	8-3¼x3¾	33.8	248.9	103-3500	190-2200	6.50	7.50	CI	155	1000	15.78	38.15	.41	38.5	3130
51	Studebaker-Champion	3G	110	190½	56¼	57	5.50/16	2450	770	6-3x4	21.6	169.6	80-4000	134-2000	6.50	....	CI	105	150	17.39	36.87	.47	39.0	3516
52	Studebaker-Comm. 6	11A	119	205¾	58¼	60⅛	6.25/16	3135	985	6-3⅛x4⅜	26.3	226.2	94-3600	176-1600	6.50	7.00	CI	105	150	16.06	38.67	.42	40.5	3358
53	Studebaker-President 8	7C	124½	211¼	58⅛	60⅛	7.00/16	3390	1115	8-3⅛x4¼	30.0	250.4	117-4000	200-2400	6.50	....	CI	105	150	15.53	33.24	.47	40.0	3212
54	Willys-Americar	441	104	181	55¼	58¼	5.50/16	2265	705‡	4-3⅛x4⅜	15.6	134.2	63-3900	108-1800	6.48	7.10	CI°	111	185	20.60	43.88	.47	32.1	3422

ABBREVIATIONS

♦—Based on shipping weight plus 500 lbs. of the cheapest 5 Pass., 4 door sedan

†—Computed on basis of tire revolutions per mile in conjunction with rear axle ratio of cheapest 5 Pass., 4 door sedan

††—Computed on basis of displacement of lowest priced sedan, rear axle ratio, effective tire diameter and shipping weight plus 500 lbs.

▼—Outer only, Inner—21 lbs., valve closed 51 lbs., valve open

■—Outer only, Inner—20 lbs., valve closed 51 lbs., valve open

*—Weight with bushing

‡—Does not include Federal taxes

°—Aluminum head special equipment

½F—Semi-Floating

¾F—Three-Quarter Floating

(a)—Stromberg AAV-16 or Carter 4878

AC—AC Spark Plug Co.

A-D—Auto-Lite or Delco-Remy

AL—The Electric Auto-Lite Co.

Al—Aluminum

Ala—Aluminum, Anodized Finish

Als—Aluminum with Struts

Alt—Aluminum with Struts, Tin Plated

At—Aluminum, Tin Plated

(b)—Stromberg—Front—AAV-16
Stromberg—Rear—AA-1
Carter—Front—509S
Carter—Rear—510S

(c)—Stromberg—Front—AAV-16
Stromberg—Rear—AA-1
Carter—Front—490S
Carter—Rear—491S

C—Conventional axle

Car—Carter Carburetor Corp.

CD—Continental Diamond Fibre Co.

Ch—Chain

CH—Champion Spark Plug Co.

CI—Cast Iron

CNt—Chrome Nickel Iron, Tin Plated

CS—Cast Steel

PASSENGER CARS

Arrangement	Valve Seat Insert (Exhaust)	VALVES: Spring Pressure (Lb.) Open	Spring Pressure (Lb.) Closed	Intake Head Diam.	Intake Seat Angle	Exhst. Head Diam.	Exhst. Seat Angle	PISTONS: Material	Weight (Oz.) Without Rings, Pin or Bushing	Pin Diameter	Pin Locked In	RINGS: No. and Width Compression	No. and Width Oil	Camshaft Drive Make and Type	Crankshaft Counterbalanced	Vibration Damper	No. of Main Bearings	Crankpin Diameter (In.)	Crankpin Length (In.)	CARBURETOR: Make and Size	Model	Spark Plug Make and Model	Electrical System Make	Battery Make	REAR AXLE: Type	Final Drive	Torque Medium	Gear Ratio	Front Suspension	Line Number
L	N	44	28	1.12	45	1.03	45	Alt	5.12	.609	R	2–$\frac{3}{32}$	1–.1237	Own Ge	Y	Y	N	3	1.25	1.00	Zen $\frac{13}{32}$	61A5	CH H10	AL	AL	½F	SB	RS	5.25	Ct	1
I	N	77	32	1.53	45	1.34	45	Ala	13.78	.813	R	2–$\frac{3}{32}$	2–$\frac{3}{32}$	LB Ch	Y	Y	5	2.00	1.21	S-C 1	(a)	AC 103	DR	DR	½F	Hyp	TT	4.10	IC	2
I	N	77[m]	32[m]	1.53	45	1.34	45	Ala	13.78	.813	R	2–$\frac{3}{32}$	2–$\frac{3}{16}$	LB Ch	Y	Y	5	2.00	1.21	S-C 1	(a)	AC 103	DR	DR	½F	Hyp	TT	4.40	IC	3
I	N	77[n]	32[m]	1.53	45	1.34	45	Ala	13.78	.813	R	2–$\frac{3}{32}$	2–$\frac{3}{16}$	LB Ch	Y	Y	5	2.00	1.21	S-C 1	(b)	AC 103	DR	DR	½F	Hyp	TT	4.40	IC	4
I	N	77[n]	32[m]	1.78	45	1.43	45	Ala	17.94	.875	R	2–$\frac{3}{32}$	2–$\frac{3}{16}$	LB Ch	Y	Y	5	2.25	1.31	S-C 1	(c)	AC 103	DR	DR	½F	Hyp	TT	3.90	IC	5
I	N	77[n]	32[m]	1.78	45	1.43	45	Ala	17.94	.875	R	2–$\frac{3}{32}$	2–$\frac{3}{16}$	LB Ch	Y	Y	5	2.25	1.31	S-C 1	(c)	AC 103	DR	DR	½F	Hyp	TT	3.90	IC	6
I	N	77[n]	32[m]	1.78	45	1.43	45	Ala	17.94	.875	R	2–$\frac{3}{32}$	2–$\frac{3}{16}$	LB Ch	Y	Y	5	2.25	1.31	S-C 1	(c)	AC 103	DR	DR	½F	Hyp	TT	4.20	IC	7
L	N	145	63½	1.88	45	1.63	45	Ala	18.30	.875	F	2–(d)	2–$\frac{3}{32}$	LB Ch	Y	Y	3	2.46	2.03	Str 1¼	AAV-26	AC 104	DR	DR	½F	Hyp	RS	3.77	IC	8
L	N	145	63½	1.88	45	1.63	45	Ala	18.30	.875	F	2–(d)	2–$\frac{3}{32}$	LB Ch	Y	Y	3	2.46	2.03	Str 1¼	AAV-26	AC 104	DR	DR	½F	Hyp	RS	3.77	IC	9
L	N	145	63½	1.88	45	1.63	45	Ala	18.30	.875	F	2–(d)	2–$\frac{3}{32}$	LB Ch	Y	Y	3	2.46	2.03	Str 1¼	AAV-26	AC 104	DR	DR	½F	Hyp	RS	3.77	IC	10
L	N	145	63½	1.88	45	1.63	45	Ala	18.30	.875	F	2–(d)	2–$\frac{3}{32}$	LB Ch	Y	Y	3	2.46	2.03	Str 1¼	AAV-26	AC 104	DR	DR	½F	Hyp	RS	3.77	IC	11
L	N	145	63½	1.88	45	1.63	45	Ala	18.30	.875	F	2–(d)	2–$\frac{3}{32}$	LB Ch	Y	Y	3	2.46	2.03	Str 1¼	AAV-26	AC 104	DR	DR	½F	Hyp	RS	4.27	IC	12
L	N	145	63½	1.88	45	1.63	45	Ala	18.30	.875	F	2–(d)	2–$\frac{3}{32}$	LB Ch	Y	Y	3	2.46	2.03	Str 1¼	AAV-26	AC 104	DR	DR	½F	Hyp	RS	4.27	IC	13
I	N	128	55	1.64	30	1.46	30	CT	*26.80	.865	R	2–.124	2–.186	Var Ge	Y	Y	4	2.31	1.50	Car 1¼	483S	AC 104	DR	DR	½F	Hyp	TT	4.11	IC	14
T	N	128	55	1.64	30	1.46	30	CT	*26.80	.865	R	2–.124	2–.186	Var Ge	Y	Y	4	2.31	1.50	Car 1¼	483S	AC 104	DR	DR	½F	Hyp	TT	4.11	IC	15
L	Y	111	42	1.66	45	1.53	45	Al	17.50	.859	F	2–⅛	2–$\frac{3}{32}$	Mor Ch	Y	Y	4	2.12	1.21	Car 1½	E6W1	AL A7	AL	Wil	½F	Hyp	RS	3.90	IC	16
L	Y	133	55	1.53	45	1.34	45	Al	16.30	.859	F	2–⅛	2–$\frac{3}{32}$	M-W Ch	Y	Y	5	2.18	1.12	Str 1¼	AAV-2	AL A7	AL	Wil	½F	Hyp	RS	3.91	IC	17
L	Y	133	55	1.53	45	1.34	45	Al	16.30	.859	F	2–⅛	2–$\frac{3}{32}$	M-W Ch	Y	Y	5	2.18	1.12	Str 1¼	AAV-2	AL AL7	AL	Wil	½F	Hyp	RS	4.55	IC	18
L	N	41	20	1.37	45	1.15	45	Cl	17.50	.749	F	2–⅛	1–$\frac{3}{32}$	Ge	Y	N	2	.750	1.00	Til $\frac{7}{8}$	DY-1A	AC A5	AL	AL	½F	SB	TT	5.14	C	19
L	Y	111	42	1.66	45	1.53	45	Al	17.50	.859	F	2–⅛	2–$\frac{3}{32}$	Mor Ch	Y	Y	4	2.12	1.21	Car 1½	E6S2	AL A7	AL	Wil	½F	Hyp	RS	4.10	IC	20
L	Y	111	42	1.47	45	1.47	45	Alt		.859	F	2–(d)	2–$\frac{3}{32}$	Mor Ch	Y	Y	4	2.06	1.00	Str 1½	BXV-3	AL A7	AL	AL	½F	Hyp	RS	4.30	IC	21
L	Y	78	38½	1.54	45	1.54	45	CS	11.82	.750	F	2–.0917	1–.1537	CD Ge	Y	N	3	2.09	1.75	Own		CH H10	Own	Own	¾F	SB	RR	3.78	Ct	22
L	N	80	40	1.37	45	1.37	45	Al	10.50	.750	F	2–$\frac{3}{32}$	2–(h)	CD Ge	Y	Y	3	1.94	1.37	Car 1¼	454S	CH J9	AL	Nat	½F	SB	RS	4.55	IC	23
L	N	80	40	1.37	45	1.37	45	Al	10.50	.750	F	2–$\frac{3}{32}$	2–(h)	CD Ge	Y	Y	3	1.94	1.37	Car 1	501S	CH J9	AL	Nat	½F	SB	RS	4.11	IC	24
L	N	80	40	1.50	45	1.37	45	Al	10.50	.750	F	2–$\frac{3}{32}$	2–(h)	CD Ge	Y	Y	5	1.94	1.37	Car 1¼	502S	CH J9	AL	Nat	½F	SB	RS	4.11	IC	25
L	N	80	40	1.50	45	1.37	45	Al	10.50	.750	F	2–$\frac{3}{32}$	2–(h)	CD Ge	Y	Y	5	1.94	1.37	Car 1¼	502S	CH J9	AL	Nat	½F	SB	RS	4.11	IC	26
L	Y	116	54	1.54	45	1.54	45	CS	12.70	.750	F	2–.0932	1–.1847	Own Ge	Y	N	4	2.12	1.75	Own		CH H10	Own	Own	¾F	Hyp	TT	4.44	Ct	27
L	Y	116	54	1.54	45	1.54	45	CS	12.70	.750	F	2–.0932	1–.1847	Own Ge	Y	N	4	2.12	1.75	Own		CH H10	Own	Own	¾F	Hyp	TT	4.44	Ct	28
L	Y	78	38½	1.54	45	1.54	45	CS	12.70	.750	F	2–.0917	1–.1537	Own Ge	Y	N	3	2.14	1.75	Own		CH H10	Own	Own	¾F	SB	TT′	3.54	Ct	29
L	N	83	39	1.34	45	1.28	45	At		.812	F	2–.093	1–.186	Whi Ch	Y	Y	4	1.99	1.25	Car 1¼	513S	AL AN7	DR	AL	½F	Hyp	TT	4.11	IC	30
I	N	95[v]	38[v]	1.75	45	1.59	45	At		.874	F	2–.124	2–.155	Whi Ch	Y	Y	7	2.00	1.43	Car 1¼	435S	AC	AL	AL	½F	Hyp	RS	4.10	IC	31
I	N	95[v]	38[v]	1.66	45	1.47	45	At	16.00	.874	F	2–.124	2–(m)	Ch	N	Y	9	2.00	1.24	Car 1⅛	511S	AC	AL	AL	½F	Hyp	RS	4.10	IC	32
L	N	95½	50½	1.56	30	1.42	45	Ala	17.37	.859	P	2–$\frac{3}{32}$	2–$\frac{3}{16}$	Whi Ch	Y	Y	4	2.12	1.25	Car 1½	504S	AC 44	DR	DR	½F	Hyp	SA	4.10	IC	33
L	N	95½	50½	1.56	30	1.42	45	Ala	17.37	.859	P	2–$\frac{3}{32}$	2–$\frac{3}{16}$	Whi Ch	Y	Y	4	2.12	1.25	Car 1½	504S	AC 44	DR	DR	½F	Hyp	SA	4.30	IC	34
L	N	95½	50½	1.56	30	1.42	45	Ala	17.37	.859	P	2–$\frac{3}{32}$	2–$\frac{3}{16}$	Whi Ch	Y	Y	4	2.12	1.25	Car 1½	504S	AC 44	DR	DR	½F	Hyp	SA	4.30	IC	35
L	N	95½	50½	1.56	30	1.42	45	Ala	16.00	.859	P	2–$\frac{3}{32}$	2–$\frac{3}{16}$	LB Ch	Y	Y	5	2.12	1.37	Car 1⅝	503S	AC 44	DR	DR	½F	Hyp	SA	4.10	IC	36
L	N	95½	50½	1.56	30	1.42	45	Ala	16.00	.859	P	2–$\frac{3}{32}$	2–$\frac{3}{16}$	LB Ch	Y	Y	5	2.12	1.37	Car 1⅝	503S	AC 44	DR	DR	½F	Hyp	SA	4.30	IC	37
L	N	95½	50½	1.56	30	1.42	45	Ala	16.00	.859	P	2–$\frac{3}{32}$	2 $\frac{1}{16}$	LB Ch	Y	Y	5	2.12	1.37	Car 1⅝	503S	AC 44	DR	DR	½F	Hyp	SA	4.30	IC	38
L	N	119	49	1.59	30	1.37	45	Alt	20.25	.875	F	2–(s)	1–.1862	MR Ch	Y	Y	4	2.09	1.25	Str 1¼	BXOV-26 (u)		A-D	Wil	½F	Hyp	RS	4.30	IC	39
L	N	119	49	1.48	30	1.37	45	Alt	17.25	.875	F	2–(t)	1–.1862	MR Ch	Y	Y	5	2.09	1.25	Car 1	478S (u)		AL	AL	½F	Hyp	RS	4.09	IC	40
L	N	135	58	1.67	30	1.44	45	Alt	20.25	.875	F	2–(s)	1–.1862	Mor Ch	Y	Y	9	2.25	1.37	Str 1¼	AAV-26 (u)		AL	AL	½F	Hyp	RS (w)		IC	41
L	N	135	58	1.67	30	1.44	45	Alt	20.25	.875	F	2–(s)	1–.1862	Mor Ch	Y	Y	9	2.25	1.37	Str 1¼	AAV-26 (u)		AL	AL	½F	Hyp	RS (w)		IC	42
L	Y	111	42	1.47	45	1.47	45	Al	14.40	.859	F	2–(d)	2–$\frac{3}{32}$	Mor Ch	Y	N	4	1.94	1.00	Car 1½	D6A2	AL A7	AL	AL	½F	Hyp	RS	4.10	IC	43
L	Y	111	42	1.47	45	1.47	45	Al	14.40	.859	F	2–(d)	2–$\frac{3}{32}$	Mor Ch	Y	N	4	1.94	1.00	Car 1½	D6A2	AL A7	AL	AL	½F	Hyp	RS	4.30	IC	44
L	N	101	59½	1.59	30	1.47	45	CNt	27.00	.937	P	2–$\frac{3}{32}$	1–$\frac{3}{16}$	Mor Ch	Y	Y	4	2.12	1.28	Car 1¼	494S	AC 45	DR	DR	½F	Hyp	RS	4.10	IC	45
L	N	101	59½	1.59	30	1.47	45	CNt	27.00	.937	P	2–$\frac{3}{32}$	1–$\frac{3}{16}$	Mor Ch	Y	Y	4	2.12	1.28	Car 1¼	494S	AC 45	DR	DR	½F	Hyp	RS	4.30	IC	46
L	N	101	59½	1.59	30	1.47	45	CNt	27.00	.937	P	2–$\frac{3}{32}$	1–$\frac{3}{16}$	Mor Ch	Y	Y	4	2.12	1.28	Car 1¼	494S	AC 45	DR	DR	½F	Hyp	RS	4.30	IC	47
L	N	101	59½	1.47	30	1.34	45	CNt	24.62	.937	P	2–$\frac{3}{32}$	1–$\frac{3}{16}$	Mor Ch	Y	Y	5	2.00	1.06	Car 1¼	469SM	AC 45	DR	DR	½F	Hyp	RS	4.10	IC	48
L	N	101	59½	1.47	30	1.34	45	CNt	24.62	.937	P	2–$\frac{3}{32}$	1–$\frac{3}{16}$	Mor Ch	Y	Y	5	2.00	1.06	Car 1¼	469SM	AC 45	DR	DR	½F	Hyp	RS	4.30	IC	49
L	N	101	59½	1.47	30	1.34	45	CNt	24.62	.937	P	2–$\frac{3}{32}$	1–$\frac{3}{16}$	Mor Ch	Y	Y	5	2.00	1.06	Car 1¼	469SM	AC 45	DR	DR	½F	Hyp	RS	4.30	IC	50
L	N	92	51	1.34	45	1.28	45	At	8.96	.750	R	2–(d)	1–$\frac{3}{32}$	CD Ge	Y	N	4	1.81	1.12	Car 1¼	496S	CH J8	AL	Wil	½F	Hyp	RS	4.56	IT	51
L	N	130	57	1.47	45	1.28	45	At	14.40	.875	R	2–.0930	1–.1862	CD Ge	Y	Y	4	2.18	1.37	Str 1¼	BKOV-26	CH 8	AL	Wil	½F	Hyp	RS	4.55	IT	52
L	N	130	57	1.41	45	1.28	45	At	13.60	.875	R	2–⅛	1–$\frac{3}{16}$	CD Ge	Y	Y	9	1.87	1.19	Str 1¼	AAV-26	CH 8	AL	Wil	½F	Hyp	RS	4.55	IT	53
L	N	116	50	1.53	45	1.47	45	At	12.50	.812	R	2–$\frac{3}{32}$	1–$\frac{3}{16}$	LB Ch	Y	N	3	1.93	1.31	Car 1¼	507S	CH J8	AL	AL	½F	Hyp	RS	4.44	C	54

Ct—Conventional, with transverse springs
CT—Cast Iron, Tin Plated
(d)—Upper $\frac{3}{32}$, Lower ⅛
DR—Delco-Remy Division
(e)—1200-2000 RPM.
(f)—DeLuxe, 6.00/16; Traveler, 5.50/16
F—Floating (Piston Pin)
(g)—Model 11—6.00/16; Model 12—6.25/16
Ge—Gear
(h)—1—$\frac{5}{32}$; 1—$\frac{3}{16}$
Hyp—Hypoid Gear
I—In Head (Valves)
IC—Independent Coil Springs
IT—Independent Transverse Springs
L—L-Head (Valves)
LB—Link Belt Co.
(m)—Third .124, Fourth .186
Mor—Morse Chain Co.
MR—Morse Chain or Ramsey Chain Co.
M-W—Morse or Whitney Chain
(n)—Model 1903—206$\frac{5}{16}$; 1904—217$\frac{1}{32}$; 1905—227$\frac{5}{16}$
N—No or none
Nat—National Battery Co.
(p)—Models 1903-4-6-7—59$\frac{1}{16}$; Models 1905-8—62$\frac{5}{16}$
P—Locked in piston
(r)—Models 1906—212$\frac{13}{32}$; 1907—217$\frac{1}{32}$ 1908—227$\frac{5}{16}$
R—Locked in rod
RR—Radius rods
RS—Rear springs
(s)—No. 1—.0932; No. 2—.1237
SA—Stabilizing arms
SB—Spiral bevel
S-C—Stromberg or Carter
Str—Stromberg Carburetor Division
(t)—No. 1—.0930; No. 2—.1237
Til—Tillotson Mfg. Co.
TT—Through torque tube
(u)—AC-104 or Champion Y4
Var—Various makes
(w)—3.92 on Models 1903-6; 4.09 on Models 1904-7; 4.36 on Models 1905-8
Whi—Whitney Mfg. Co.
Wil—Willard Storage Battery Co.
Y—Yes
Zen—Zenith Carburetor Division

American Two-Cycle Outboard Motors

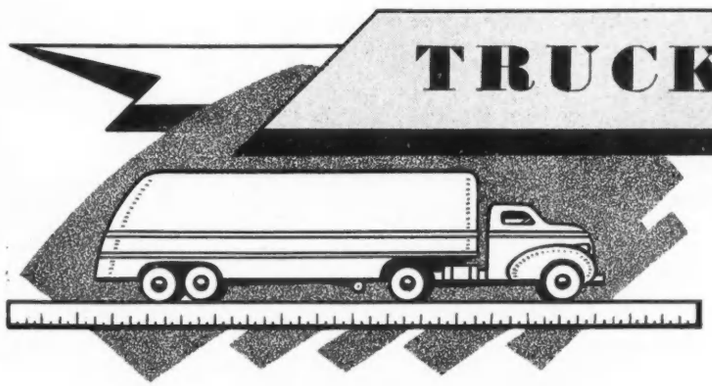
MAKE AND MODEL	Power Head	Number of Cylinders	Bore and Stroke (In.)	Piston Displacement (Cu. In.)	Engine Type	BRAKE HP. at R.P.M. N. O. A.	BRAKE HP. at R.P.M. Advertised	Engine Weight (Lb.) Fully Equipped	Piston Rings Number and Width	PROPELLER Diameter (In.)	PROPELLER Pitch	PROPELLER Number of Blades	Starting Device	Fuel Tank Capacity (Pts.)	GEAR Ratio	GEAR Tooth Pitch	GEAR Material (S.A.E. No.)	Gearcase Bearing	Grease Seals on Gearcase	Ignition System Type	CARBURETOR Make	CARBURETOR Size (In.)	CARBURETOR Slow Speed Adjustment	CARBURETOR Starting Mixture Obtained	Spark Plug—Make and Model	BEARINGS Main	BEARINGS Connecting Rod	Exhaust—Type	Cooling System	Reverse	Lubrication—Pints Oil to 1 Gal. Gasoline
Champion (1) D1G	RV-2 Port	1	2¼x1¾	6.23		3-0	3.2-3500	33½	2-1/8	7½	6½	2	RR	7	13-21	12.57	4150	P	Y	Mag	Til		Y	F	CH-H9	P	P	Un	Ce	N	¾
Champion S1G	RV-2 Port	1	2¼x1¾	6.23		3-0	3.2-3500	32	2-1/8	7½	6½	2	Cord	7	13-21	12.57	4150	P	Y	Mag	Til		Y	F	CH-H9	P	P	Un	Ce	N	¾
Champion D4G	RV-2 Port	1	2¼x1¾	6.39		3-6	4.0-3800	35	2-1/8	8½	7	2	RR	7	13-21	12.57	4150	P	Y	Mag	Til		Y	F	CH-H9	P	P	Un	Ce	N	¾
Champion S4G	RV-2 Port	1	2¼x1¾	6.39		3-6	4.0-3800	33½	2-1/8	8½	7	2	Cord	7	13-21	12.57	4150	P	Y	Mag	Til		Y	F	CH-H9	P	P	Un	Ce	N	¾
Champion 2G	RV-2 Port	2	2⅛x1⅛	11.08	2-O	5-3	5.5-3500	54	2-1/8	8¼	7½	3	Cord	8	13-21	12.57	4150	P	Y	Mag	Til		Y	F	CH-7	P	P	Un	Ce	N	¾
Champion 3G	RV-2 Port	2	2⅛x1¾	12.46	AF	6-1	7.0-4000	49	2-1/8	8¾	9	2	RR	7	13-21	12.57	4150	P	Y	Mag	Til		Y	F	CH-H9	P	P	Un	Ce	N	¾
Eclipse (2) SMD	RV-2 Port	1	2⅛x1½	5.01	2-Cy.		2.5-3300	27	3-1/8	7½	5	2	Cord	4½	14-19			P	Y	Mag	Str	¾	Y	C	CH-J10	P	P	Un	Air	N	½
Eclipse TMD	RV-2 Port	2	2⅛x1½	10.02	2-O		5.0-4000	41	3-1/8	8¼	6	2	Cord	7	14-19			P	Y	Mag	Str	¾	Y	C	CH-J10	P	P	Un	Air	N	½
Elto (3) Cub	Ch.V-2 Port	1	1⅛x1	1.00	2-Cy.	.50-4000	.50-4000	8½	2-3/32	5½	4¾	2	Cord	1	12-25	16.0	A	P	N	Mag	Own		Y	Pr	CH-H10			Un	Ce	N	¼
Elto Pal	Ch.V-2 Port	1	1⅜x1⅜	2.00	2-Cy.	1.1-3750	1.1-3750	14	2-3/32	6	5	2	Cord	1.6	13-20	13.33	A	P	N	Mag	Own		Y	Pr	CH-H10			Un	Ce	N	⅓
Elto Ace	Ch.V-2 Port	1	1¾x1¾	3.75	2-Cy.	1.8-3500	1.8-3500	21	2-3/32	7	6	2	Cord	3.4	13-20	10.00	A	P	Y	Mag	Own		Y	Pr	CH-H10			Un	Ce	N	⅓
Elto Handitwin	Ch.V-2 Port	2	1¾x1⅜	6.60	2-O	3.3-3500	3.3-3500	31½	2-3/32	7½	6	2	Cord	3.4	13-20	10.00	A	P	Y	Mag	Own		Y	Pr	CH-C7			Un	Ce	N	⅓
Elto Lightwin	Ch.V-2 Port	2	2x1⅝	10.00	2-O	5.0-3500	5.0-3500	40	2-1/8	7½	7½	2	Cord	4	13-20	10.38	X-1314	P	Y	Mag	Own		Y	Pr	CH-M6			Un	Ce	N	½
Elto Weedless Lightwin	Ch.V-2 Port	2	2x1⅝	10.00	2-O	5.0-3500	5.0-3500	48	2-1/8	7½	8	2	Cord	4	13-20	10.38	X-1314	P	Y	Mag	Own		Y	Pr	CH-M6			Un	Ce	N	½
Elto Fleetwin	RV-2 Port	2	2¼x1⅞	15.00	2-O	8.5-4000	8.5-4000	66	2-1/8	9	9	2	Cord	9	13-19	8.00	2512	P	Y	Mag	Own		Y	Pr	CH-M6			Un	Ce	N	½
Evinrude (3) Mate	Ch.V-2 Port	1	1⅛x1	1.00	2-Cy.	.50-4000	.50-4000	10	2-3/32	5½	4¾	2	Cord	1	12-25	16.00	A	P	N	Mag	Own		Y	Pr	CH-H10			Un	Ce	N	1
Evinrude Ranger	Ch.V-2 Port	1	1⅜x1⅜	2.00	2-Cy.	1.1-3750	1.1-3750	16	2-3/32	6	5	2	Cord*	4	13-20	12.33	A	P	N	Mag	Own		Y	Pr	CH-H10			Un	Ce	N	⅓
Evinrude Sportsman	Ch.V-2 Port	1	1¾x1¾	3.75	2 Cy.	2.0-3500	2.0-3500	26	2-3/32	7	6	2	Cord*	4	13-20	10.00	A	P	Y	Mag	Own		Y	Pr	CH-H10			Un	Ce	N	⅓
Evinrude Sportwin	Ch.V-2 Port	2	1¾x1⅜	6.60	2-O	3.3-3500	3.3-3500	39	2-3/32	7½	6	2	Cord*	6.8	13-20	10.00	A	P	Y	Mag	Own		Y	Pr	CH-H10			Un	Ce	N	⅓
Evinrude Midget Racer	RV-2 Port	2	1¾x1¾	7.50	2-O			37½	3-3/32	6¾	8½	2	Cord	9	13-20	10.38	X-1314	P		Mag	Own				CH-R1			Muf	Ce	Y	2
Evinrude Speeditwin	RV-2 Port	2	2¾x2½	30.00	2-O	22.5-4000	22.5-4000	110	3-3/32	10½	10½	3	Cord	20	15-21	8.09	2512	P	Y	Mag	Own		Y	Pr	CH-M5			Un	Ce	N	1½
Evinrude Racing Speeditwin	RV-2 Port	2	2¾x2¾	30.00	2-O			97	2-1/8	9½	14	2	Cord	20	13-19	8.00	2512	P		Bat	Vac				CH-R11S				Ce	N	2
Evinrude Zephyr	RV-2 Port	4	1¼x1⅜	9.70	2-O	5.4-4000	5.4-4000	43	2-3/32	7½	7½	2	Cord*	6.8	13-20	10.38	X-1314	P	Y	Mag	Own		Y	Pr	CH-J10			Un	Ce	N	½
Evinrude Light Four	RV-2 Port	4	1¾x1¾	15.00	2-O	9.7-4000	9.7-4000	63	3-3/32	8¾	9	2	Cord*	9	11-17	8.50	2512	P	Y	Mag	Own		Y	Pr	CH-M5			Un	Ce	N	¾
Evinrude Sport Four	RV-2 Port	4	2x2	25.00	2-O	17.6-4000	17.6-4000	104	3-1/8	9¾	10¼	3	Cord*	20	13-19	8.00	2512	P	Y	Mag	Own		Y	Pr	CH-M5			Un	Ce	N	1
Evinrude Speedifour	RV-2 Port	4	2½x2½	50.00	2-O	33.4-4000	33.4-4000	140	3-3/32	10½	13	3	Cord†	32	15-21	8.09	2512	P	Y	Mag	Own		Y	C	CH-M5			Un	Ce	N	1½
Evinrude Racing-460	RV-2 Port	4	2¾x2½	60.00	2-O			140	2-1/8	10½	18	2	Cord	32	13-19	7.30	2512	P		Bat	Vac				CH-R11S				Ce	N	2
Johnson (4) MS-20	3 Port	1	1½x1⅜	2.43	2-Cy.	1.5-4000	1.5-4000	24	2-3/32	6⅝	4¼	2	Cord	4.9	13-20	13.3	X-1314	P	Y	Mag	Joh	½	Y	C	CH-J8J	P	P	Un	RFP	Y	½
Johnson MD-20	3 Port	1	1½x1⅜	2.43	2-Cy.	1.5-4000	1.5-4000	26	2-3/32	6⅝	4¼	2	RR	4.9	13-20	13.3	X-1314	P	Y	Mag	Joh	½	Y	C	CH-J8J	P	P	Un	RFP	Y	½
Johnson HS-20 CRT		2	1⅜x1⅜	4.08	AF	2.5-4000	2.5-4000	27	2-3/32	6⅝	5¼	2	Cord	4.9	13-20	13.3	X-1314	P	Y	Mag	Joh	½	Y	C	CH-J8J	P	P	Un	RFP	Y	½
Johnson HD-20 CRT		2	1⅜x1⅜	4.08	AF	2.5-4000	2.5-4000	29	2-3/32	6⅝	5¼	2	RR	4.9	13-20	13.3	X-1314	P	Y	Mag	Joh	½	Y	Pr	CH-J8J	P	P	Un	RFP	Y	½
Johnson TS-15 CRT		2	1⅛x1⅛	8.84	AF	5.0-4000	5.0-4000	40	3-3/32	8	7½	2	Cord	7	14-25	12.0	X-1314‡	P	Y	Mag	Joh	1/16	Y	Pr	CH-J8J	P	P	Un	RFP	Y	½
Johnson TD-15 CRT		2	1⅛x1⅛	8.84	AF	5.0-4000	5.0-4000	42	3-3/32	8	7½	2	RR	7	14-25	12.0	X-1314‡	P	Y	Mag	Joh	1/16	Y	Pr	CH-J8J	P	P	Un	RFP	Y	½
Johnson KS-15 RV-2 Port		2	2⅛x1⅛	13.96	AF	9.8-4000	9.8-4000	64	3-1/8	9½	9½	2	Cord	13	14-24	10.0	4615	AP	Y	Mag	Joh	1 1/16	Y	C	CH-R7	P	P	Un	PV	Y	1
Johnson KD-15 RV-2 Port		2	2⅛x1⅛	13.96	AF	9.8-4000	9.8-4000	71	3-1/8	9½	9½	2	RR	13	14-24	10.0	4615	AP	Y	Mag	Joh	1 1/16	Y	C	CH-R7	P	P	Un	PV	Y	1
Johnson SD-10 RV-2 Port		2	2½x2¼	22.09	AF	16.0-4000	16.0-4000	89	3-3/32	10	12	3	RR	20	14-24	10.0	4615	AP	Y	Mag	Joh	1 1/8	Y	Pr	CH-5M	P	P	Un	PV	N	1
Johnson PO-15 RV-2 Port		2	2¾x2.52	29.92	2-O	22.0-4000	22.0-4000	109	3-1/8	12	12	3	Cord	20	12-21	7.5	2512	AP	Y	Mag	Vac	2	Y	C	CH-R7	P	P	Un	PV	Y	1
Mercury-Comet (5) KB-1	Ch.V-2 Port	1	2x1¾	5.50		2.9-4000	2.9-4000	28	3-1/16	7¾	7	2	Cord	5	12-22			P	Y	Mag	Own		Y	F	CH-J8J	P	A	Un	Rot	N	¾
Mercury-Streamliner KB-2	SP-2 Port	1	2x1¾	5.50		3.1-4000	3.1-4000	30	3-1/16	7¾	7	2	Cord	5	12-22			P	Y	Mag	Til		Y	C	CH-J8J	P	P	Un	Rot	N	¾
Mercury-Torpedo KB-3	SP-2 Port	1	2x1¾	5.50		3.1-4000	3.1-4000	33	3-1/16	7¾	7	2	Cord	5	12-22			P	Y	Mag	Til		Y	C	CH-J8J	P	P	Un	Rot	N	¾
Mercury-Rocket KB-4	SP-2 Port	2	2x1¾	11.00	AF	6.0-4000	6.0-4000	43	3-1/16	7¾	10	3	Cord					P	Y	Mag	Til		Y	C	CH-J8J	P	P	Un	Rot	N	¾
Neptune (6)-Jr. Single 11A1	2 Port	1	1⅛x1½	2.87	2-Cy.		1.5-3000	17	2-3/32	6	5	2	Cord	2	13-20	14.0		P	Y	Mag	Til		Y	F	CH-J5	P	P	Un	Ce	N	⅓
Neptune-Single 11A2	3 Port	1	2⅛x1½	5.01	2-Cy.		2.0-3400	28	3-3/32	7½	5½	2	Cord	4	13-21	14.0	2345	P	Y	Mag	Til		Y	F	CH-6M	P	P	Un	Ro	Y	⅓
Neptune 11A3	3 Port	2	1⅜x1½	5.74	AF		3.5-3500	33	2-3/32	7½	5½	2	Cord	4	13-21	14.0	2345	P	Y	Mag	Til		Y	F	CH-J10	P	P	Un	Ro	Y	⅓
Neptune-Jr.Twin 11B4	3 Port	2	2⅛x1½	10.02	2-O		4.0-3000	45	3-3/32	8	7	2	Cord	8	14-21	12.0	X-1315	P	Y	Mag	Til		Y	F	CH-J10	P	P	Un	Ro	Y	⅓
Neptune-Six 11A6	3 Port	2	2⅛x1½	10.02	AF		6.0-4000	47	3-3/32	8	7	2	Cord	8	14-21	12.0	X-1315	AP	Y	Mag	Til		Y	C	CH-J10	P	P	Un	Ce	N	⅓
Neptune-Nine 11A10	3 Port	2	2¼x2	15.90	AF		9.5-4000	58	3-3/32	9	9	3	Cord	8	12-21	8.0	2345	AP	Y	Mag	Til		Y	F	CH-J10	A	A	Un	Ro	N	⅓
Neptune-Master Twin	3 Port	2	2½x2	19.63	2-Cy.		16.0-4000	95	3-3/32	10	10	3	Cord	16	12-21	8.0	2345	AP	Y	Mag	Til		Y	F	CH-J10	P	P	Un	Ro	N	1
Waterwitch (7) 571-35	2 Port	1	1⅛x1⅜	2.43	2-Cy.	1.0-4000	1.0-4000	20½	2-	6½	4	2	Cord	2	12-21	14.00	Bronze	P	Y	Mag	Til		Y	F	CH-J10	A	A	Un	Ce	N	1
Waterwitch 571-41	2 Port	1	2x1⅞	5.90	2-Cy.	3.0-3600	3.0-3600	35	2-	7½	7	2	Cord	5	14-21	11.00	Bronze	P	Y	Mag	Til		Y	F	CH-H10	P	P	Un	Air	N	¾
Waterwitch 571-13	2 Port	1	2¼x1⅞	7.40	2-Cy.	3.5-3600	3.5-3600	44	2-	8½	7	2	RR	14	14-21	12.00	X-1315	P	Y	Mag	Til		Y	F	CH-J8	P	P	Un	VP	N	¾
Waterwitch 571-24	2 Port	2	2¼x1⅞	14.90	2-Cy.	5.7-3400	5.7-3400	57¾	2-	9	7	2	RR	14	14-21	12.00	X-1315	P	Y	Mag	Til		Y	Pr	CH-8	P	P	Un	VP	N	¾
Waterwitch 571-50	3 Port	2	2⅜x2⅛	18.83	AF	10.1-4000	10-4000	73	2-1/8	9	10	2	RR	14	14-23	10.00	3140	P	Y	Mag	Bra	1	Y	Pr	CH-H10	AP	P	Un	VP	N	1

ABBREVIATIONS:

*—Rewinding rope starter optional at extra cost
†—Electric starter optional at extra cost
‡—4615 for Pinion
(1)—Champion Outboard Motors Co.
(2)—Bendix Aviation Corp., Marine Div.
(3)—Evinrude Motors, Div.
(4)—Johnson Motors, Div.
(5)—Kiekhaefer Corp.
(6)—Muncie Gear Works, Inc.
(7)—Sears, Roebuck & Co. (Mfg. by Kissel Industries)

2-O—2 Cycle opposed
A—Antifriction bearing
AF—Alternate firing
AP—Antifriction and plain bearing
Bat—Battery C—Choke
Bra—Bracke
Ce—Centrifugal pump
CH—Champion Spark Plug Co.
Ch-V—Check Valve
CRT—Combination Rotary and third port
Cy—Cycle F—Flooding
Joh—Johnson Carburetor
Mag—Magneto
Muf—Muffler N—No
P—Plain Bearing Pr—Primer
PV—Pressure Vacuum
RFP—Rubber Rotor Force Pump
Ro—Rotor Pump
Rot—Rotex Pump
RR—Rewinding Rope
RV—Rotary Valve
SP—Special Poppet Valve
Str—Stromberg Carburetor Div.
Til—Tillotson Carburetor
Un—Underwater
Vac—Vacturi Carburetor
VP—Vane Pump Y—Yes

TRUCK SPECIFICATIONS



KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix.
BL—Brown-Lipe.
Bu or Bud—Buda.
Cat—Caterpillar.
Cl or Cla—Clark.
C or Chev—Chevrolet.
Co.—Covert.
Con—Continental.
Col—Columbia.
Cum—Cummins-Diesel.
Det—Detroit Gear.
Eat—Eaton.
Fu—Fuller.
F—Ford.
Her—Hercules.
L—Lockheed.
LO—Lockheed front, Own rear.
LW—Lockheed front, Wisconsin rear.
Lyc—Lycoming.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Sal—Salisbury.
Shu—Shuler.
Spi—Spicer.
T or Tim—Timken.
TO—Timken front, Own rear.
TW—Timken-Wisconsin.
TWH—Timken Wisconsin Herrington.
WG—Warner Gear.
WH—Wisconsin Herrington.
W-Hes—Waukesha Hesselman.
Wau—Waukesha.
W or Wis—Wisconsin.
WO—Wagner front, Own rear.
Ws—Westinghouse.

BRAKES—SERVICE Location

2—Two Wheels, rear only.
4—Four Wheels, front and rear.
4r—Four Wheels, rear only.
6—Six Wheels front and rear.

Type

I—Internal.
X—External.

Operation

A—Air.
D—Hydraulic and mechanical.
H—Hydraulic.
M—Mechanical.
V—Vacuum.

BRAKES—HAND Location

C—Center of double propeller shaft.
2—Rear wheels.
2/4—Two-wheel brakes effective on all four wheels through driveshaft.
4—Four wheels.
6—Six wheels.
J—Jackshaft.
T—Transmission.
F—Driveshaft.
P—Propeller shaft.

Type

D—Tru-Stop disk.
I—Internal.
X—External.

BRAKE DRUMS Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
C—Centrifuse.
Cl—Copper iron.
D—Dayton.
E—Ermalite.
F—Furnace iron.
G—Gunite.
N—Nickel iron.
p—Pressed steel.
P—Pressed steel.
s—Cast steel.

(Where a combination of any of the above is used the first reference mark applies to the front and the second to the rear drums.)

FRAME Type

I—"I" Beam.
C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center.
Tf—Tapered front.
X—x-Braced.
S—Deep section channel frame with oak insert.

GOVERNOR STANDARD

Y—Yes.
N—No.

REAR AXLE Final Drive and Type

B—Bevel.
C—Chain.
D—Dead.
F—Full-floating.
Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
½—Semi-floating.
¾—Three-quarter floating.

Gear Ratios

(*)Ratios other than standard at extra cost.
(**)Only one ratio.

Drive and Torque

A—Radius Rods and Torque Arm.
H—Hotchkiss (springs).
R—Radius Rods.
T—Torque Arm.
U—Torque Tube.

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
4F—Front Axle and Forward unit of Rear Axle Group.
4FR—Front Axle and Rear unit of Rear Axle Group.
6—All wheels.

KEY TO ABBREVIATIONS, DEFINITIONS AND REFERENCES

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

KEY TO REFERENCES

c.f.—Cab Forward design.

c.o.e.—Cab-Over-Engine design.

(C)—Converted Ford or Chevrolet model, identifiable by engine make listed.

(d)—For dump or tractor service only.

(D)—Diesel-engine equipped.

e.b.s.—Engine-between-seat design.

e.u.s.—Engine-under-seat design.

(N)—Not available as a tractor.

(T)—Designed for tractor use only.

(3) **Available**—All models available in c.o.e. design, oversize power plants, oil engines and six-wheel construction.

(4) **Chevrolet**—Governor set not to exceed 45 M.P.H.

(5) **Condor**—These models available with double drop bus frames.

(6) **Federal**—263 cu. in. engine and 11" clutch available on Models 15 and 75. 404 cu. in. and 428 cu. in. engines available on Models 40 and 45. 428 cu. in. engine available on Models 50, 55 and 50H. 428 cu. in., 501 cu. in. and 517 cu. in. engines available on Model 55H. Oversize or two-speed rear axles available on Models 15, 18, 20, 25, 29, 29H, 35, 40, 45, 75, 80, 85, 89 and 89H. Double reduction rear axles available on Models 20, 25, 29, 29H, 35, 40, 45, 80, 85, 89 and 89H. Two or three-speed auxiliary transmissions available on all models. Air brakes available on Models 25, 29, 29H, 35, 40, 45, 50, 55, 50H, 55H, 85, 89 and 89H. All above at extra cost.

(6a) Federal models 25 and 85, when equipped with 9.00/20 tires and either Timken 96411 or Eaton 17000 rear axle, have gross rating of 20000 lb.

(7) **Federal**—Models 29H and 89H when furnished with fishplates, radius rods and 9.75/20 tires are known as 29XH and 89XH and have 25,000 lbs. gross rating.

(7a) **Federal**—Model 62 when furnished with fishplates, 10.50/24 tires and Continental 21RF engine is known as Model 62X and has a dry chassis weight of 10,975 lbs.

(9) **Gramm**—Models 31, 41, 46, 56, 71, 76, 86 and 96 both gasoline and diesel available with double drop bus frames of various wheelbases. 221 cu. in. engine available on Model 21. 263 cu. in. engine available on Models 31 and 41. 282 cu. in. engine and 5 speed transmission available on Models 41, 46, and 56. 320 cu. in. engine and 5 speed transmission available on Models 41, 46, 56, and 71. 404 cu. in. engine and larger 5 speed transmission available on Model 86. Oversize two speed and double reduction axles available on Models 21, 31, 41, 46, 56, 71, 76 and 86 both gasoline and diesel. All other equipment furnished at extra cost.

(10) **Corbitt**—Wheelbases optional—any wheelbase desired furnished at chassis price listed.

(11) **International Harvester**—By "Normal operating conditions" (see definition of Gross Vehicle Weight for Normal Service) is meant operation on comparatively level terrain, over roads with a tractive resistance value of from 25 to 30 pounds per ton of gross vehicle weight and at controlled and uniform speeds within a range of not to exceed 45 m.p.h.

(14) **Reo**—Also available with four speed transmission and bevel gear rear axle.

(15) **Sterling**—Available with double reduction rear axle.

(16) **Sterling**—Diesel powered unit of comparable capacity available in addition to gasoline models.

(18) **Willys**—Advertised list price less Federal tax. Cab Pick-up $525; Cab Stake $545; Panel Delivery $799. Prices complete with shock absorbers and front and rear bumpers. Standard tires 5.50/16—4 ply; Panel Delivery 6.00/16—4 ply; 6.00/16s—6 ply—optional.

1941 Truck Specifications

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE: Minimum Standard	WHEEL-BASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear): Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE: Make, Location Type, Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Avail- (3) C-100	1370	Opt	Opt	11500	4000	6.50/20D	7.50/20	Wau BL	6-3½x4¼	245	5.7	165	73-3000	7-2⅝x10¼	N	WG T9	4	Tim 53514H	SF	H	**-6.6	Tim 30000H	L4IH	266	388	a	TX	60	10x3x¼	T
2	able C-200	1520	Opt	Opt	12600	4200	7.00/20D	7.50/20	Wau BL	6-3½x4¼	245	5.7	165	73-3000	7-2⅝x10¼	N	WG T9	4	Tim 53308H	SF	H	**-6.6	Tim 31000H	L4IH	304	477	a	TX	60	10x3x¼	T
3	C-250	1600	Opt	Opt	14000	4300	7.00/20D	8.25/20	Wau BL	6-3½x4¼	245	5.7	165	73-3000	7-2⅝x10¼	N	WG T9	4	Tim 53308H	SF	H	**-6.6	Tim 31000H	L4IH	300	552	a	TX	60	10x3x¼	T
4	C-300	1795	Opt	Opt	16000	4800	7.50/20D	8.25/20	Wau BM	6-3⅝x4¼	263	5.7	178	78-3100	7-2⅝x10¼	N	WG T9	4	Tim 54411H	SF	H	**-6.8	Tim 31000H	L4IH	328	603	a	TX	60	10x3x¼	T
5	C-350	1905	Opt	Opt	17000	4900	7.50/20D	9.00/20	Wau BK	6-3¾x4¼	282	5.7	188	85-3200	7-2⅝x10¼	N	WG T9A	4	Tim 56410H	SF	H	**-6.8	Tim 32502H	L4IH	328	603	a	TX	60	10x3x¼	T
6	C-400	2135	Opt	Opt	20000	5400	8.25/20D	9.00/20	Wau BK	6-3¾x4¼	282	5.7	188	85-3200	7-2⅝x10¼	N	WG T9A	5	Tim 56410H	SF	R	**-7.4	Tim 32502H	L4IH	328	603	a	TX	60	12x3x¼	T
7	C-450	2085	Opt	Opt	20500	5550	8.25/20D	9.00/20	Wau BK	6-3¾x4¼	282	5.7	188	85-3200	7-2⅝x10¼	N	WG T9A	5	Tim 56410H	SF	R	**-7.4	Tim 33000H	L4IH	328	603	a	TX	60	12x3x¼	T
8	C-500	2440	Opt	Opt	22000	6100	9.00/20D	9.00/20	Wau BZ	6-4x4¼	320	5.7	210	86-2800	7-2⅝x10¼	Y	Fu 5A330	5	Tim 58300H	SF	R	**-7.8	Tim 33000H	L4IH	370	684	a	TX	60	12x3x¼	T
9	C-550	2880	Opt	Opt	23000	6800	9.00/20D	10.00/20	Wau MKR	6-4¼x4⅜	381	5.3	270	99-2400	7-2⅝x12½	Y	Fu 5-A-430	5	Tim 58300H	SF	R	**-7.8	Tim 35000H	L4IH	370	684	a	TX	60	12x3x¼	T
10	C-600	3320	Opt	Opt	26500	7400	10.00/20D	11.00/20	Wau MZR	6-4¼x4¾	404	5.3	290	106-2400	7-2⅝x12½	Y	Fu 5-A-430	5	Tim 65743H	WF	R	6.8-10.25	Tim 35000H	L4IH	459	793	a	TD	60	12x3x¼	T
11	C-650	3800	Opt	Opt	26500	8000	10.00/20D	11.00/20	Wau SRLR	6-4¾x5⅛	462	5.5	330	112-2300	7-3x13⅞	Y	Fu 5-A-620	5	Tim 65743H	WF	R	6.8-10.25	Tim 35000H	L4IH	459	793	a	TD	60	12x3x¼	T
12	C-700	4175	Opt	Opt	35000	8700	10.00/20D	12.00/20	Wau SRKR	6-4⅝x5⅛	517	5.5	365	126-2300	7-3x13⅞	Y	Fu 5-A-620	5	Tim 66728H	WF	R	6.8-10.25	Tim 26452H	L4IH	544	867	a	TD	60	12x3x¼	T
13	Bantam	349	75	75	1700	850	4.00/15S	5.00/15	Own	4-2.26x3½	50	7.4	34.1	22-3800	3-2¼x1.005	N	WG T48E	3	Spi 10	S	H	**-5.25	Spi 10	O4IM	76	104	P	4I	114	8x2¼x.109	....
14	Brockway 78	895	138	164	13000	3965	6.00/20D	32x6	Con 24B	6-3¼x4⅜	210	6.0	154	71-3100	4-2¾x6	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IH	255	402	a	TX	65¼	8x3x¼	T
15	83	1195	138	176	14000	4100	6.50/20D	7.50/20	Con 25B	6-3⅓x4⅝	244	6.2	180	82-3100	4-2⅝x6	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IHV	255	402	a	TX	65¼	8x3x¼	T
16	88	1290	150	176	15000	4500	6.50/20D	7.50/20	Con 25B	6-3⅓x4⅝	244	6.2	180	82-3100	4-2⅝x6	N	WG T9	4	Tim 53307H	SF	H	6.2 -6.8	Tim 30000H	L4IHV	298	477	a	TX	71¼	8x3x¼	T
17	92	1560	150	188	16000	4700	7.00/20D	8.25/20	Con 25B	6-3⅓x4⅝	244	6.2	180	82-3100	4-2⅝x6	N	WG T9	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83¼	8x3x¼	T
18	94	1850	156	188	18500	5050	7.50/20D	8.25/20	Con 25B	6-3⅓x4⅝	244	6.2	180	82-3100	4-2⅝x6	N	BL B341	4	Tim 56410H	SF	H	6.16-7.4	Tim 31000H	L4IHV	329	580	a	CD	83¼	8x3x¼	T
19	110	1900	156	188	18000	5490	7.50/20D	8.25/20	Con 29B	6-3½x4½	288	5.4	192	78-2650	7-2⅜x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83¼	8x3x¼	T
20	112	1710	150	188	18000	5150	7.00/20D	8.25/20	Con 38B	6-3¾x4½	290	6.0	217	92-2800	7-2½x12	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	77¼	8x3x¼	T
21	125X	2075	164	188	18000	5570	7.50/20D	8.25/20	Con 31B	6-3⅞x4½	318	5.5	214	86-2600	7-2¼x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	91¼	8x3x¼	T
22	128	1950	156	188	20000	5550	7.50/20D	8.25/20	Con 38B	6-3¾x4⅝	290	6.2	217	92-2800	7-2½x12	N	BL B341	4	Tim 56410H	SF	H	5.71-7.4	Tim 31000H	L4IHV	329	580	a	CD	83¼	8x3x¼	T
23	130	2245	164	206	20000	6270	8.25/20D	9.00/20	Con 29B	6-3½x4½	288	5.4	192	78-2650	7-2⅜x13	N	BL B341	4	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	329	580	a	CD	91¼	8x3x¼	T
24	130-PS	2525	164	206	20000	6250	34x7D	9.00/20	Con 29-B	6-3½x4½	288	5.4	192	78-2650	7-2⅜x13	N	Fu 5-A-43	5	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	329	580	a	CD	91¼	8x3x¼	B
25	145	2385	176	206	20000	6390	8.25/20D	9.00/20	Con 31B	6-3¾x4½	318	5.5	214	86-2600	7-2¼x13	N	BL B341	4	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	329	580	a	CD	103¼	8x3x¼	T
26	146	2690	126	206	20000	6060	8.25/20	9.00/20	Con 40B	6-4x4⅜	330	6.0	245	104-2800	7-2½x12	Y	Fu 5A330	5	Tim 56411H	SF	R	5.76-7.4	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
27	(T) 147	2855	132	164	.....	6000	8.25/20	9.00/20	Con 40B	6-4x4⅜	330	6.0	245	104-2800	7-2½x12	Y	Fu 5A33	5	Eat A617000	SFd	H	Dual Rge.	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
28	150X-4	2680	176	206	22000	6520	8.25/20D	9.00/20	Con 32B	6-4½x4½	361	5.4	252	95-2500	7-2⅝x13	Y	BL 3241	4	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	329	580	a	CD	103¼	8x3x¼	T
29	150X-5	2710	176	206	22000	6570	8.25/20D	9.00/20	Con 32B	6-4½x4½	361	5.4	252	95-2500	7-2⅝x13	Y	Fu 5-A-43	5	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	329	580	a	CD	103¼	8x3x¼	T
30	152	2870	126	206	22000	6350	8.25/20	9.00/20	Con 41B	6-4½x4⅝	371	5.9	280	100-2500	7-2⅞x13½	Y	Fu 5A43	5	Tim 56411H	SF	R	5.71-6.83	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
31	(T) 153	3025	132	164	.....	6400	8.25/20	9.00/20	Con 41B	6-4½x4⅝	371	5.9	280	100-2500	7-2⅞x13½	Y	Fu 5A43	5	Tim 58300H	SF	H	6.14-7.8	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
32	(T) 154	3050	132	164	.....	6300	8.25/20	9.00/20	Con 41B	6-4½x4⅝	371	5.9	280	100-2500	7-2⅞x13½	Y	Fu 5A43	5	Eat A617000	SFd	H	Dual Rge.	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
33	(T) 156	3700	132	164	.....	6950	9.00/20	10.00/20	Con 42B	6-4¼x4½	405	5.7	305	112-2500	7-2¼x13½	Y	Fu 5A43	5	Eat A6-20000	SFd	H	Dual Rge.	Tim 32505H	L4IHV	459	768	a	CD	53	8¼x3x	T
34	160X	3295	153	219	25000	7350	9.00/20D	9.75/22	Con 32B	6-4½x4½	361	5.4	252	95-2500	7-2⅝x13	Y	Fu 5-A-43	5	Tim 58300H	SF	R	6.14-7.8	Shu 15785B	L4IHV	370	663	a	CD	83¼	8¼x3x	T
35	162	3450	121	219	25000	7250	9.00/20	10.00/20	Con 41B	6-4½x4⅝	371	5.9	280	100-2500	7-2⅞x13½	Y	Fu 5A43	5	Tim 58300H	SF	R	6.14-7.8	Shu 15785B	L4IHV	370	663	a	CD	51	8¼x3x	T
36	166	4070	121	219	28000	7800	10.00/20	11.00/20	Con 42B	6-4¼x4⅝	405	5.7	305	112-2500	7-2¼x13½	Y	Fu 5A43	5	Wis 1337H	2F	R	5.63-8.59	Shu 15785B	L4IHV	459	772	a	CD	51	8¼x3x	T
37	170X	3640	153	219	25000	7960	9.00/20D	9.75/22	Con 33B	6-4½x4¼	381	4.7	276	106-2600	7-2¾x13	Y	Fu 5-A-62	5	Tim 72300H	2F	R	5.78-7.35	Shu 15785B	L4IHV	370	663	a	CD	83¼	8¼x3x	T
38	165X	3795	153	219	28000	8150	9.75/20D	10.50/22	Con 32B	6-4½x4½	361	5.4	252	95-2500	7-2⅝x13	Y	Fu 5-A-43	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15785B	L4IHV	459	772	a	CD	83¼	8¼x3x	T
39	175X	4290	153	219	30000	8550	9.00/20D	10.50/22	Con 34B	6-4⅜x4¾	427	5.4	322	133-2600	7-2¾x13	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15785B	L4IHV	459	772	a	CD	83¼	8¼x3x	T
40	195X	4230	153	219	28000	8650	9.75/20D	10.50/22	Con 33B	6-4½x4¼	381	4.7	276	106-2600	7-2¾x13	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15785B	L4IHV	459	772	a	CD	83¼	8¼x3x	T
41	220X	4930	153	219	34000	9050	10.50/20D	11.25/24	Con 34B	6-4⅜x4¾	427	5.4	322	133-2600	7-2¾x13	Y	Fu 5-A-62	5	Wis 1757H	2F	R	6.06-8.82	Shu 15795B	L4IHV	536	899	a	CD	83¼	8¼x3x	T
42	240X	5130	153	219	30000	8590	9.75/20D	10.50/24	Con 35B	6-4½x5¼	501	5.4	370	144-2400	7-2¾x13	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-7.52	Shu 15785B	L4IHV	459	772	a	CD	83¼	8¼x3x	T
43	260X	6030	195	219	34000	9720	10.50/22D	11.25/24	Con 35B	6-4½x5¼	501	5.4	370	144-2400	7-2¾x13	Y	Fu MHU	4	Wis 1757H	2F	R	6.06-8.82	Shu 15795B	L4IHV	536	899	a	CD	125¼	8¼x3x	T
44	260S	6380	195	219	36000	10000	10.50/24D	11.25/24	Con 35B	6-4½x5¼	501	5.4	370	144-2400	7-2¾x13	Y	Fu MHU	4	Wis 1757H	2F	R	6.06-8.82	Shu 15795B	Lw4IDV	600	899	a	CD	125¼	8¼x3x	B
45	Chevrolet AK	478	115	115	4400	2360	6.00/16S	15/6S	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	3	Own	Hy	U	4.11	Own	O4IH	158	242	a	2I	38¼	5¾x2¼x	C
46	AJ	*1058	115	115	5000	*3810	6.00/16S	15/6S	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	3	Own	Hy	U	4.55	Own	O4IH	158	242	a	2I	38½	5¾x2¼x	C
47	AL	556	125	125	5200	2525	15/6S	15/6S	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	3	Own	Hy	H	4.55	Own	O4IH	158	242	a	2I	43½	5¾x2¼x	C
48	AN *	848	134	134	5800	*3895	7.00/17S	7.50/17-8S	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	3	Own	Hy	H	4.55	Own	O4IH	194	297	a	2I	43½	7x2¾x	C
49	YR	591	134	134	6700	3040	6.00/20S	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	a	2I	57¾	7x2¾x	C
50	YR	613	134	134	7700	3095	6.00/20S†	7.50/20-8S	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	a	2I	57¾	7x2¾x	C
51	YR	623	134	134	9500	3235	6.00/20D	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	57¾	7x2¾x	C
52	YR	754	134	134	•13500	3495	6.50/20D‡	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	57¾	7x2¾x	C
53	YS	639	160	160	7700	3395	6.00/20S†	7.50/20-8S	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	a	2I	83¼	7x2¾x	C
54	YS	649	160	160	9500	3490	6.00/20D	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	83¼	7x2¾x	C
55	YS	780	160	160	•13500	3750	6.50/20D‡	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	83¼	7x2¾x	C
56	(c.o.e.) YU	731	109	109	7700	3410	6.00/20D†	7.50/20-8S	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	a	2I	67½	7x2¾x	C
57	(c.o.e.) YU	741	109	109	9500	3550	6.00/20D	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	67½	7x2¾x	C
58	(c.o.e.) YU	872	109	109	•13500	3810	6.50/20D‡	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	67½	7x2¾x	C
59	(c.o.e.) YV	756	132	132	7700	3505	6.00/20S†	7.50/20-8S	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	a	2I	86	7x2¾x	C
60	(c.o.e.) YV	766	132	132	9500	3645	6.00/20D	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	86	7x2¾x	C
61	(c.o.e.) YV	897	132	132	•13500	3905	6.50/20D‡	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	86	7x2¾x	C
62	(c.o.e.) YW	782	158	158	7700	3790	6.00/20S†	7.50/20-8S	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	a	2I	111½	7x2¾x	C
63	(c.o.e.) YW	792	158	158	9500	3930	6.00/20D	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	111½	7x2¾x	C
64	(c.o.e.) YW	923	158	158	•13500	4190	6.50/20D‡	7.50/20-8p	Own	6-3½x3¾	216	6.5	174	90-3300	4-2¾x5	N	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	a	2I	111½	7x2¾x	C
65	Condor ..DZA-1	1592	131	155	10000	3200	6.00/20S	32x6-8p	W-HES XBKH	4-3¾x4¼	210	6.2	125	41-2200	3-2¼x5½	Y	WG T9	4	Cla R650	SF	H	4.62-6.16	Cla F182	L4IH	212	352	a	TX	60½	7x2¾x	T
66	(5) DZB-1	1628	131	227	12000	3500	6.00/20S	32x6-8p	W-HES XBKH	4-3¾x4¼	210	6.2	125	41-2200	3-2¼x5½	Y	WG T9	4	Cla R750	SF	H	5.1-6.83	Cla F266	L4IH	233	392	a	TX	60½	7⅛x2¾x¼	T
67	(5) DZC-1	1698	131	227	14000	3900	6.00/20S	8.25/20	W-HES XBKH	4-3¾x4¼	210	6.2	125	41-2200	3-2¼x5½	Y	WG T9	4	Tim 53300	SF	H	4.57-6.6	Tim 30000H	L4IH	238	402	a	TX	60½	7⅛x2¾x¼	T
68	(5) DZD-1	1866	131	227	15000	4500	6.00/20S	8.25/20	W-HES XBKH	4-3¾x4¼	210	6.2	125	41-2200	3-2¼x5½	Y	WG T9A	4	Tim 54411	SF	H	4.12-6.8	Tim 30000H	L4IH	331	528	a	TX	60½	7⅛x2¾x¼	P
69	(5) DZE-1	2015	131	227	14000	4100	6.00/20S	8.25/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 185F	4	Tim 53300	SF	H	4.57-6.2	Tim 30000H	L4IH	238	402	a	TX	60½	7⅛x2¾x¼	T
70	(5) DZF-1	2327	131	227	15000	4900	6.50/20D	8.25/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 185F	4	Tim 54411	SF	H	4.12-6.8	Tim 31000H	L4IHV	338	578	a	TX	60½	10x2¾x	P
71	(5) DZG-1	2572	131	227	17000	5400	7.00/20D	9.00/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 200V	5	Tim 55411	SF	H	5.71-7.4	Tim 31000H	L4IHV	338	578	a	TX	60½	10x2¾x	P
72	(5) DZH-1	2723	131	227	19000	5600	7.00/20D	9.75/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 200V	5	Tim 56411	SF	H	4.44-7.4	Tim 32500H	L4IHV	338	578	a	TX	60½	10x2¾x	P
73	(5) DZJ-1	2964	131	227	21500	5900	7.50/20D	10.50/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 200V	5	Tim 58300	SF	H	5.25-7.8	Tim 33000H	L4IHV	384	660	a	TX	60½	10x2¾x	P
74	Corbitt 13B	1500	159	179	14500	4800	7.50/20D	8.25/20	Con A6244	6-3¼x4⅛	244	5.4	170	83-3200	4-2⅛x6⅝	N	Cla B116C	4	Tim 54411H	SF	H	5.83-6.80	Tim 30020H	L4IH	310	528	A	TX	79	7⅞x3½x	T
75	17B	2400	166	Op	18500	5700	8.25/20D	9.00/22	Con M6290	6-3¾x4⅝	290	5.5	206	87-2800	7-2¾x12	N	Fu 5A330	5	Tim 56411H	SF	H	6.06-7.40	Tim 33000H	L4IHV	381	660	A	TX	81	8x3½x	T
76	21B	3250	167	Op	22500	7750	9.00/20D	10.50/22	Con F-602	6-4⅜x4½	361	5.4	252	95-2500	7-2⅝x13	N	Fu 5A430	5	Tim 58300H	SF	H	5.57-7.80	Tim 35000H	L4IHV	500	768	A	TX	82	8x3½x	T

† Rear 7.00/20 8-ply single. ‡ Rear 7.50/20 8-ply dual. • 14,000 lb. when truck is equipped with two-speed rear axle and 8.25/20 10 ply tires. * Includes special panel body.

† Rear 7.00/20 8-ply single. ‡ Rear 7.50/20 8-ply dual. ● 14,000 lb. when truck is equipped with [illegible]

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1941 Truck Specifications

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Dual unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make	BRAKES SERVICE Location	BRAKES SERVICE Type	BRAKES SERVICE Operat'n	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
	Federal (•) Cont.																																	
1	(6).....35	2395	140	255	22500	6700	8.25/20D	9.75/20	Her WXC3	6-4¼x4½	383	5.9	285	107-2800	7-2¾x13¼	Y	Cla 205V	5	Tim 56411H	SF	H	6.16-7.40	Tim 32515H	L4IHV	415	735	a	TX	57	10½x3½x⅜	T
2	(6).....45	2950	140	255	24000	7300	9.00/20D	10.50/24	HerWXLC3	6-4¼x4½	404	6.3	307	125-2800	7-2⅝x13¼	Y	Cla 270V	5	Tim 58301H	SF	H	5.57-7.80	Tim 33006H	L4IHV	504	844	a	PD	57	10½x3½x⅜	T
3	(6).....55	3525	140	255	28000	8000	9.00/20D	10.50/24	HerWXLC3	6-4¼x4½	404	6.3	307	125-2800	7-2⅝x13¼	Y	Cla 270V	5	Tim 75743H	2F	R	6.85-9.41	Tim 35011H	L4IHV	504	844	a	PD	57	10½x3½x⅜	T
4	(6).....55H	4005	140	255	30000	8300	9.75/20D	10.50/24	HerWXLC3	6-4¼x4½	404	6.3	307	125-2800	7-2⅝x13¼	Y	Cla 270V	5	Tim 76796H	2F	R	7.34-9.20	Tim 35011H	L4IHV	504	844	a	PD	57	10½x3½x⅜	T
5	(7a).....62	5675	141	211	35000	10400	10.50/20D	11.25/24	Con 22RF	6-4½x5½	501	5.2	400	150-2300	7-2⅝x14⅛	Y	Cla 326VO	5	Tim 76746W	2F	R	7.34-9.20	Tim36000TW	Ws41A	620	921	a	TD	57	10⅞x3⅜x¼	TF
6	63	5675	141	211	35000	10250	10.50/20D	11.25/24	Wau 6SRKRF	6-4⅝x5½	517	5.5	369	126-2300	7-3x13⅞	Y	Cla 326VO	5	Tim 76746W	2F	R	7.34-9.20	Tim36000TW	Ws41A	620	921	a	TD	57	10⅞x3⅜x¼	TF
7	65	6425	141	211	40000	11300	10.50/24D	11.25/24	Con 22RF	6-4½x5½	501	5.2	400	150-2300	7-2⅝x14⅛	Y	Cla 326VO	5	Tim 79733W	2F	R	8.59-10.11	Tim36000TW	Ws41A	724	1051	a	TD	57	10⅞x3⅜x¼	TF
8	66	6425	141	211	40000	11150	10.50/24D	11.25/24	Wau 6SRKRF	6-4⅝x5½	517	5.5	369	126-2300	7-3x13⅞	Y	Cla 326VO	5	Tim 79733W	2F	R	8.59-10.11	Tim36000TW	Ws41A	724	1051	a	TD	57	10⅞x3⅜x¼	TF
9	.....(c.o.e.) 76	795	104	215	13000	4000	6.00/20S	7.50/20	Her JXFF	6-3⅜x4¼	232	6.1	164	75-3000	7-2½x10⅜	N	WG T9	4	Tim 53547H	SF	H	5.14-6.66	Tim 31100H	L4IH	299	478	a	TX	60	8⅛x2⅛x¼	T
10	.....(c.o.e.) 77	895	104	215	14000	4280	6.00/20†S	8.25/20	Her JXGF	6-3½x4¼	245	5.7	174	79-3000	7-2½x10⅜	Y	WG T9	4	Tim 53308H	SF	H	5.14-6.66	Tim 31100H	L4IH	299	478	a	TX	60	8⅛x2⅛x¼	T
11	(6)....(c.o.e.) 80	1260	104	215	17500	4900	6.50/20D	9.00/20	Her JXBF	6-3⅝x4¼	263	6.1	187	82-3000	7-2½x10⅜	Y	WG T9	4	Tim 54411H	SF	H	5.83-6.80	Tim 31102H	L4IHV	330	578	a	TX	60	8⅛x2⅛x¼	T
12	(6-6a) (c.o.e.)..85	1565	104	215	19000	5600	7.00/20D	9.00/20	Her JXCF	6-3¾x4¼	282	6.1	208	85-2900	7-2½x10⅜	Y	Cla 185F	4	Tim 55411H	SF	H	5.71-7.40	Tim 32515H	L4IHV	374	654	a	TX	60	8⅛x2⅛x¼	T
13	(6)....(c.o.e.) 89	1945	104	215	20000	5720	7.50/20D	9.75/20	Her JXDF	6-4x4¼	320	5.9	244	95-2800	7-2½x10⅜	Y	Cla 205V	5	Tim 56411H	SF	H	6.16-7.40	Tim 32515H	L4IHV	415	735	a	TX	60	8⅛x2⅛x¼	T
14	(6-7)(c.o.e.) 89H	2175	104	215	22500	6050	8.25/20D	9.75/20	Her JXDF	6-4x4¼	320	5.9	244	95-2800	7-2½x10⅜	Y	Cla 205V	5	Tim 58301H	SF	H	6.83-7.80	Tim 32515H	L4IHV	504	844	a	TX	60	8⅛x2⅛x¼	T
15	.....(c.o.e.) 90	2560	116	173	22500	6600	8.25/20D	9.75/20	Her WXC3	6-4¼x4½	383	5.9	285	107-2800	7-2⅝x13¼	Y	Cla 205V	5	Tim 56411H	SF	H	6.16-7.40	Tim 35011H	L4IHV	415	735	a	TX	72	10½x3½x⅜	T
16	.....(c.o.e.) 92	3095	116	173	24000	7200	9.00/20D	10.50/24	HerWXLC3	6-4¼x4½	404	6.3	307	125-2800	7-2⅝x13¼	Y	Cla 270V	5	Tim 58301H	SF	H	5.57-7.80	Tim 35011H	L4IHV	504	844	a	TX	72	10½x3½x⅜	T
17	.....(c.o.e.) 94	3645	116	173	28000	7900	9.00/20D	10.50/24	HerWXLC3	6-4¼x4½	404	6.3	307	125-2800	7-2⅝x13¼	Y	Cla 270V	5	Tim 75743H	2F	R	6.85-9.41	Tim 35011H	L4IHV	504	844	a	PD	72	10½x3½x⅜	T
18	.....(c.o.e.) 94H	4125	116	173	30000	8300	9.75/20D	10.50/24	HerWXLC3	6-4¼x4½	404	6.3	307	125-2800	7-2⅝x13¼	Y	Cla 270V	5	Tim 76796H	2F	R	7.34-9.41	Tim 35011H	L4IHV	504	844	a	PD	72	10½x3½x⅜	T
19	Ford Reg...11T-81	xx 605	134	134	.....	z3138	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	221	...	150	85-3800	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	60.06	7x2.75x.21	CTf
20	....Reg...19T-81	xx 630	134	134	.....	z3138	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	239	...	176	95-3600	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	60.06	7x2.75x.21	CTf
21	....Reg..118T-81	xx 630	158	158	.....	z3197	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	221	...	150	85-3800	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	84.06	7x2.75x.21	CTf
22	....Reg..198T-81	xx 655	158	158	.....	z3197	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	239	...	176	95-3600	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	84.06	7x2.75x.21	CTf
23	.(c.o.e.) 111W-81	** 840	101	101	.....	*3547	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	221	...	150	85-3800	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	59.60	7x2.75x.21	CTf
24	.(c.o.e.) 191W-81	** 865	101	101	.....	*3547	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	239	...	176	95-3600	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	59.60	7x2.75x.21	CTf
25	.(c.o.e.) 11W-81	** 860	134	134	.....	*3624	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	221	...	150	85-3800	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	92.93	7x2.75x.21	CTf
26	.(c.o.e.) 19W-81	** 885	134	134	.....	*3624	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	239	...	176	95-3600	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	92.93	7x2.75x.21	CTf
27	.(c.o.e.) 118W-81	** 885	158	158	.....	*3701	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	221	...	150	85-3800	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	117.0	7x2.75x.21	CTf
28	.(c.o.e.) 198W-81	** 910	158	158	.....	*3701	6.00/20†S	7.50/18-10	Own	8-3⅛x3¾	239	...	176	95-3600	3-2.5x4.71	N	Own O1T	4	Own	FS	H	5.14-6.67	Own	O4IH	303	506	A	TX	117.0	7x2.75x.21	CTf
29	1 Tonner 11Y-83	xx 590	122	122	.....	z2635	6.00/17‡S	7.50/17	Own	8-3⅛x3¾	221	...	150	85-3800	3-2.5x4.71	N	Own 11Y	3	Own	FS	H	4.86-	Own	O4IH	187	308	A	21	48.21	6x2.25x.19	CTf
30	1 Tonner 1NY-83	xx 584	122	122	.....	z2429	6.00/17‡S	7.50/17	Own	4-3x3¾	120	...	85	30-2800	3-2.25x4.86	N	Own ONY	3	Own	FS	H	-6.67	Own	O4IH	187	308	A	21	48.21	6x2.25x.19	CTf
31	¾ Tonner 11D-83	xx 555	122	122	.....	z2375	6.50/16°S	7.00/16	Own	8-3⅛x3¾	221	...	150	85-3800	3-2.5x4.71	N	Own 11Y	3	Own	FS	H	4.86-	Own	O4IH	162	264	A	21	48.21	6x2.25x.19	CTf
32	¾ Tonner 1ND-83	xx 549	122	122	.....	z2205	6.50/16°S	7.00/16	Own	4-3x3¾	120	...	85	30-2800	3-2.25x4.86	N	Own ONY	3	Own	FS	H	-6.67	Own	O4IH	162	264	A	21	48.21	6x2.25x.19	CTf
33	Com. Car 11C-83	xx 490	112	112	.....	z2075	6.00/16S	6.50/16	Own	8-3⅛x3¾	221	...	150	85-3800	3-2.5x4.71	N	Own O1C	3	Own	S¾	U	4.78-4.11	Own	O4IH	162	264	A	21	38.16	5.5x2x.11	TIX
34	Com. Car 1NC-83	xx 470	112	112	.....	z1905	6.00/16S	6.50/16	Own	4-3x3¾	120	...	85	30-2800	3-2.25x4.86	N	Own 1NC	3	Own	S¾	U	4.55-	Own	O4IH	162	264	A	21	38.16	5.5x2x.11	TIX
35	Gramm 11A	695	131	155	6500	2850	7.00/16S	7.50/16S	Her QXR3G	6-3¼x4½	205	5.8	144	66-3500	7-2½x10⅛	N	WG T3	3	Spi 51-1	SF	H	**-5.10	Spi 50-1	L4IH	218	328	a	TX	60½	7x2¾x⅜	T
36	(9).....21A	745	131	155	10000	3000	6.00/20S	32x6-8p	Her QXB3G	6-3¼x4½	205	5.8	144	66-3500	7-2½x10⅛	N	WG T9	4	Cla R650	SF	H	4.62-6.17	Cla F182	L4IH	212	352	a	TX	60½	7x2¾x⅜	T
37	(9).....31A	825	131	225	12000	3300	6.00/20S	32x6-8p	Her QXC3G	6-3⅝x4½	221	5.9	154	67-3000	7-2½x10⅛	N	Cla R750	4	Cla R750	SF	H	5.10-6.83	Cla F266	L4IH	233	392	a	TX	60½	7½x2¾x¾	T
38	(9).....41A	885	131	227	14000	3750	6.00/20S	32.25/20	Her QXC3G	6-3⅝x4½	221	5.9	154	67-3000	7-2½x10⅛	N	WG T9	4	Tim 53300	SF	H	4.57-6.60	Tim 30000H	L4IH	252	402	a	TX	60½	7½x2¾x¾	T
39	(9).....46A	1095	131	227	14000	3900	6.00/20S	8.25/20	Her JXBG	6-3⅝x4¼	263	6.1	187	82-3000	7-2½x10⅜	N	WG T9A	4	Tim 53300	SF	H	4.57-6.20	Tim 30000H	L4IH	252	402	a	TX	60½	7½x2¾x¾	T
40	(9).....56A	1295	131	227	15000	4700	6.50/20D	8.25/20	Her JXBG	6-3⅝x4¼	263	6.1	187	82-3000	7-2½x10⅜	N	WG T9A	4	Tim 54411	SF	H	4.12-6.80	Tim 31000H	L4IHV	334	578	a	TX	60½	10x2¾x⅜	P
41	(9).....71A	1595	131	227	17000	5200	7.00/20D	9.00/20	Her JXCG	6-3¾x4¼	282	5.9	208	85-2900	7-2½x10⅜	N	Cla 200V	5	Tim 55411	SF	H	5.71-7.40	Tim 31000H	L4IHV	334	578	a	TX	60½	10x2¾x⅜	P
42	(9).....76A	1895	131	227	19000	5400	7.00/20D	9.75/20	Her JXDG	6-4x4¼	320	5.9	244	95-2800	7-2½x10⅜	N	Cla 200V	5	Tim 56411	SF	H	4.44-7.40	Tim 32500H	L4IHV	334	578	a	TX	60½	10x2¾x⅜	P
43	(9).....86A	2195	131	227	21500	5700	7.50/20D	10.50/20	Her JXDG	6-4x4¼	320	5.9	244	95-2800	7-2½x10⅜	N	Cla 200V	5	Tim 58300	SF	H	5.25-7.80	Tim 33000H	L4IHV	380	660	a	TX	60½	10x2¾x⅜	P
44	(9).....96A	3395	131	227	28000	8000	9.00/20D	10.50/20	HerWXLC3	6-4¼x4½	404	5.9	294	118-2800	7-2⅝x10⅝	N	Cla 270V	5	Wis 1337H	2F	H	5.63-8.59	Tim 35000H	L4IHV	474	768	a	TX	60½	12x2¾x⅜	P
45	(D) (9)....D46A	2420	131	227	14000	4100	6.00/20S	8.25/20	Her DJXB	6-3½x4½	260	14.	178	77-2600	7-3x10½	Y	Cla 185F	4	Tim 53300	SF	H	4.57-5.66	Tim 30000H	L4IH	252	402	a	TX	60½	7½x2¾x¾	T
46	(D) (9)....D56A	2620	131	227	15000	4900	6.50/20D	8.25/20	Her DJXB	6-3½x4½	260	14.	178	77-2600	7-3x10½	Y	Cla 185F	4	Tim 54411	SF	H	4.12-6.80	Tim 31000H	L4IHV	334	578	a	TX	60½	10x2¾x⅜	P
47	(D) (9)....D71A	2875	131	227	17000	5400	7.00/20D	9.00/20	Her DJXC	6-3¾x4½	298	14.	194	84-2600	7-3x10½	Y	Cla 200V	5	Tim 55411	SF	H	5.72-6.29	Tim 31000H	L4IHV	334	578	a	TX	60½	10x2¾x⅜	P
48	(D) (9)....D76A	3245	131	227	19000	5700	7.00/20D	9.75/20	Bud 6DT31	6-3⅝x5½	317	14.	224	90-2300	7-3x10½	Y	Cla 200V	5	Tim 56411	SF	H	4.44-7.40	Tim 32500H	L4IHV	334	578	a	TX	60½	10x2¾x⅜	P
49	(D) (9)....D86A	4250	131	227	21500	6000	7.50/20D	10.50/20	Bud 6DT38	6-3⅝x5½	389	14.	284	96-2100	7-3x10½	Y	Cla 270V	5	Tim 58300	SF	H	5.25-6.83	Tim 33000H	L4IHV	380	660	a	TX	60½	10x2¾x⅜	P
50	(D) (9)....D96A	5075	131	227	28000	8000	9.00/20D	10.50/20	Bud 6DT38	6-3⅝x5½	389	14.	284	96-2100	7-3x12½	Y	Cla 270V	5	Wis 1337H	2F	H	5.63-8.59	Tim 35000H	L4IHV	474	768	a	TX	60½	12x2¾x⅜	P
51	.....GF	5500	150	225	24000	9050	9.75/20D	10.50/20	Her HXC	6-5¼x6	779	4.5	505	143-1600	7-3½x17	N	BL 744	4	Wis 1337H	2F	H	4.29*7.2	Tim 33000	L4IHV	474	768	a	TD	67	12x2½x¾	TP
52	Hug.....87W	3550	134	134	26000	8190	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4½	404	5.3	286	95-2200	7-2⅝x12½	Y	Fu 5A43	5	Wis 1337BM	2F	T	**-8.59	Shu 625	W2MV	331	531	a	TD	84	8x4⅛x⅜	I
53	.....92U	5250	134	134	33500	9500	11.25/20D	12.00/24	Wau6SRKR	6-4⅝x5½	517	4.5	365	125-2200	7-3x13⅞	Y	Fu 5A62	5	Wis 1910	2F	T	8.88-10.0	Shu 655	W2MV	360	540	a	TD	84	8x4⅛x⅜	I
54	.....(D) 92U	6500	134	134	33900	9915	11.25/20D	12.00/24	Cum HB4	4-4⅞x6	448	17.	370	100-1800	5-4½x11¼	Y	Fu 5A62	5	Wis 1910	2F	T	8.88-10.0	Shu 655	W2MV	360	540	a	TD	84	8x4⅛x⅜	I
55	.....•..92H	6150	134	134	36606	11152	11.25/20D	11.25/24	Wau6SRKR	6-4⅝x5½	517	4.5	365	125-2200	7-3x13⅞	Y	Fu 5A62	5	Tim 79740	2F	T	10.12-1	Shu 655	2IMV	360	628	A	P	85	8x4.07x.34	I
56	98	7450	144	144	48500	11920	12.00/24D	12.00/24	Wau 6GAL	6-5x5½	648	4.6	468	132-1800	7-4x18⅝	s	Fu 8A86	8	Tim 79740	2F	T	7.9-10.12	Shu 1673	W4IA	727	1138	a	TD	86½	9x4⅛x⅜	I
57	.....(D) D98	8425	144	144	48500	11920	12.00/24D	12.00/24	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	Fu 8A86	8	Tim 79740	2F	T	7.9-10.12	Shu 1673	W4IA	727	1138	a	TD	86½	9x4⅛x⅜	I
	International (11)																																	
58	.....D-2	475	113	113	4400	2240	6.00/16S	7.00/15S	Own HD213	6-3⅛x4¼	213	6.3	155	78-3400	4-2⅝x6⅛	N	Own HDS	3	Own R1000	S½	H	3.72-4.18	Own F12	B4IH	191	264	e	2I	39	6x2¼x¼	T
59	.....D-2-M	1115	102	113	4600	1995	6.00/16S	7.00/15S	Ow HD213B	6-3⅛x4¼	213	6.3	155	78-3400	4-2⅝x6⅛	N	Ow S-HDS	3	Own R1001	S½	H	4.18**	Own F102	B4IH	191	264	e	PX		6½x2¼x¼	T
60	.....D-3	515	125	125	5200	2290	6.00/16S	7.00/15S	Own HD213	6-3⅛x4⅜	213	6.3	155	78-3400	4-2⅝x6⅛	N	Own HDS	3	Own R1000	S½	H	3.72-4.18	Own F12	B4IH	191	264	e	2I	51	6x2¼x¼	T
61	.....D-5	490	113	125	4400	2120	6.00/16S	7.00/15S	Wau FC132	4-3⅛x4	132	6.0	89	33-2800	3-2½x4⅛	N	Own HDS	3	Own R1000	S½	H	4.18-5.11	Own F12	B4IH	191	264	e	2I	39	6-2¼x½	T
62	.....D-15-H	605	113	130	6650	2720	7.00/16S	6.00/20	Ow HD213A	6-3⅛x4¼	213	6.3	155	78-3400	4-2⅝x6⅛	N	Own HDS	3	Own R1101	SF	H	4.875-6.5	Own F100	B4IH	216	308	e	PX	57	8x2¼x¼	T
63	.....D-15-M	1255	102	113	7000	2275	7.00/16S	7.00/20S	Ow HD213B	6-3⅛x4¼	213	6.3	155	78-3400	4-2⅝x6⅛	N	Ow SH41A	3	Own R1101	SF	H	4.875-6.5	Own F200	B4IH	216	308	e	PX		6½x2¼x¼	T
64	.....D-30	650	128	173	13200	3410	30x5†S	8.25/20	Own HD232	6-3⅛x4½	232	6.0	170	81-3200	4-2⅝x6⅛	N	Own H41A	4	Own R2320	d SF	H	5.14-8.81	Own F302	B4IH	293	412	e	PX	57	8x2½x⅜	T
65	.....DS-30	765	128	173	13300	3510	30x5†S	8.25/20	Own HD232	6-3⅛x4½	232	6.0	170	81-3200	4-2⅝x6⅛	N	Own H41A	4	Own R2320	d SF	H	5.14-8.81	Own F302	B4IH	293	412	e	PX	57	8x2½x⅜	T
66	.....D-35	970	137	179	14600	4035	6.50/20D	8.25/20	Ow FAB241	6-3⅜x4½	241	5.8	175	84-3200	4-2⅝x5⅝	N	Own H41A	4	Own R1300	SF	H	5.63-7.16	Own F301	B4IHV	293	412	e	PX	60	8⅛x3⅜x⅜	T
67	.....DS-35	1085	137	179	14600	4035	6.50/20D	8.25/20	Ow FAB241	6-3⅜x4½	241	5.8	175	84-3200	4-2⅝x5⅝	N	Own H41A	4	Own R1300	d SF	H	5.14-8.81	Own F301	B4IHV	293	412	e	PX	60	8⅛x3⅜x⅜	T
68	.....D-40	1365	134	176	16200	4705	7.00/20D	9.00/20	Ow FAB259	6-3½x4½	259	5.7	192	89-3200	4-2⅝x5⅝	N	Own F51	5	Own R1400	SF	H	5.63-7.16	Own F400	B4IHV	341	478	e	PX	60	8¼x3⅜x⅜	T
69	.....DS-40	1550	134	176	16325	4830	7.00/20D	9.00/20	Ow FAB259	6-3½x4½	259	5.7	192	89-3200	4-2⅝x5⅝	N	Own F51C	5	Own R2410	d SF	H	5.63-8.52	Own F400	B4IHV	341	478	e	PX	60	8¼x3⅜x⅜	T
70	.....D-50	1975	137	179	18800	6115	7.50/20D	9.75/20	Ow FBB318	6-3⅞x4½	318	5.4	241	100-2800	7-2¼x11⅛	Y	Own F51	5	Own R1500	SF	H	5.62-7.16	Own F500	B4IHV	368	532	e	PX	60	8⅛x3½x⅜	T
71	.....DS-50	2185	137	179	18800	6115	7.50/20D	9.75/20	Ow FBB318	6-3⅞x4½	318	5.4	241	100-2800	7-2¼x11⅛	Y	Own F52C	5	Own R2500	d SF	H	5.62-8.74	Own F500	B4IHV	368	532	e	PX	60	8⅛x3½x⅜	T
72	.....DR-50	2140	137	179	18935	6250	7.50/20D	9.75/20	Ow FBB318	6-3⅞x4½	318	5.3	241	100-2800	7-2¼x11⅛	Y	Own F51	5	Own R1550	2 SF	H	7.10-8.50	Own F500	B4IHV	368	532	e	PX	60	8⅛x3½x⅜	T
73	▲(D)DD-50	3325	137	179	18935	7105	7.50/20D	9.75/20	Cum HB400	4-4⅞x6	448	17.	330	100-1800	5-4½x11⅛	Y	Own F52	5	Own R1500	SF	H	5.62-7.16*	Own F500	B4IHV	268	532	e	PX	60	8⅛x3½x⅜	T
74	.....D-60	2795	149	197	22500	7090	9.00/20D	10.50/20	Ow FBB361	6-4⅛x4½	361	5.2	268	111-2700	7-2¼x11⅛	Y	Own F52	5	Own R1600	SF	H	5.62-6.43*	Own F600	B4IHV	469	679	e	PX	72	9½x3½x⅜	T
75	.....DR-60	2945	149	197	22500	7090	9.00/20D	10.50/20	Ow FBB361	6-4⅛x4½	361	5.2	268	111-2700	7-2¼x11⅛	Y	Own F52	5	Own R1661	2 SF	H	7.10-9.03	Own F600	B4IHV	469	679	e	PX	72	9½x3½x⅜	T
76	.....▲(D)DD-60	4095	149	197	22500	7945	9.00/20D	10.50/20	Cum HB400	4-4⅞x6	448	17.	330	100-1800	5-4½x11⅛	Y	Own F52	5	Own R1600	SF	H	5.62-6.43*	Own F600	B4IHV	469	679	e	PX	72	9½x3½x⅜	T
77	.....DR-70	4195	149	197	26900	8000	36x8D	11.25/20	Ow FBB401	6-4⅛x5	401	5.2	308	114-2600	7-2¼x11⅛	Y	Own F52	5	Own R1700	2 SF	H	5.4-9.03*	Own F700	T4IA	618	923	G	PX	72	10x3½x⅜	T
78	....(D) DRD-70	5810	149	197	26900	9595	36x8D	11.25/20	Cum HB600	6-4½x6	672	17.	500	150-1800	7-4½x16½	Y	Own F54	5	Own R1700	2 SF	H	5.4-9.03*	Own F700	T4IA	618	923	G	PD	72	10x3½x⅜	T
79	.....A-8	6200	160	225	38000	11835	9.75/20D	12.00/24	Own FEB	6-5x5½	648	4.4	460	140-2100	7-3¼x17⅜	Y	Own H7	5	Own 1305	2 SF	H	4.95-9.44	Own FW910	T4IA	618	923	G	PD	72	12⅛x3⅛x⅜	T
80	.....(D) AD-8	7185	160	225	38000	12285	9.75/20D	12.00/24	Cum HB600	6-4½x6	672	17.	500	150-1800	7-4½x16½	Y	Own H7	5	Own 1585	2 SF	H	4.95-9.44	Own FW910	T4IA	618	923	G	PD	72	12⅛x3½x1	T

† Rear 6.50/20. * Rear 7.00/16. ‡ Rear 7.00/17. = Rear 32x6 single. * Ford—Weight includes chassis and cab. ** Ford—Suggested retail price, distribution and delivery charges and all taxes extra. Price includes chassis and cab.
(•) Federal—Chassis weight shown is for average chassis without cab and complete with average size tires, tools, spare rim, fuel, oil and water. ▲ International—6-cyl. Diesel engine Model AA-600 also available in these chassis.
xx Ford—Price of chassis & cowl. z Ford—Shipping weight chassis & cowl.

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1941 Truck Specifications

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	White.....WA-14	1095	136	226	14000	4425	6.50/20S	8.25/20	Own 100A	6-3 3/16 x4 1/2	250	6.7	185	90-2800	7-3x10.8	Y	Own 400B	4	Own 100C	BF	H	4.45-6.83	Own 32D	4IH	338	533	a	TX	60 1/4	8x3x1/4	C
2	.....WA-18	1550	136	226	16000	5181	7.00/20D	9.00/20	Own 110A	6-3 3/16 x4 1/2	270	6.5	200	100-2600	7-3x10.8	Y	Own 401B	4	Own 101C	BF	H	4.45-6.83	Own 49D	4IH	368	587	a	TX	60 1/4	8 1/8 x3 1/4 x 1/2	C
3	.....WA-20	1975	136	226	18000	5610	7.00/20D	9.00/20	Own 120A	6-3 7/8 x4 1/2	318	6.4	250	110-2600	7-3x10.8	Y	Own 552B	5	Own 102C	BF	H	5.11-7.17	Own 37D	4IH	439	663	a	TX	60 1/4	8x3x1/4	C
4	.....WA-22	2450	136	226	21000	6210	7.50/20D	10.00/20	Own 140A	6-3 7/8 x5 1/2	362	6.3	285	125-2600	7-3x10.8	Y	Own 551B	5	Own 33C	BF	H	4.75-7.14	Own 16D	4IH	525	823	a	TX	60 1/4	8 1/8 x3 1/4 x 1/4	C
5	.....WA-26	3250	136	226	24000	7497	9.00/20D	11.00/22	Own 140A	6-3 7/8 x5 1/2	362	6.3	285	125-2600	7-3x10.8	Y	Own 551B	5	Own 43C	B2F	R	7.23-8.73	Own 24D	4IH	560	875	a	TX	60 1/4	8 1/8 x3 1/4 x 1/4	C
6	.....WA-34	4250	136	226	32000	8487	10.00/20D	12.00/20	Own 140A	6-3 7/8 x5 1/2	362	6.3	285	125-2600	7-3x10.8	Y	Own 551B	5	Own 45C	B2F	R	6.67-9.50	Own 9D	4IA	632	1050	a	TX	60 1/4	8 1/8 x3 1/4 x 1/4	L
7	720	4500	134	212	26000	8016	9.00/20D	11.00/22	Own 529A	6-4 5/8 x5 3/4	529	5.0	390	133-2400	7-2 3/4 x13 3/4	Y	Own 36B		Own 34C	BF	R	6.29	Own 24D	4IA	629		TD	60	8 1/8 x3 1/4 x 1/4	C
8	722	5500	134	212	30000	9021	10.00/20D	12.00/20	Own 529A	6-4 5/8 x5 3/4	529	5.0	390	133-2400	7-2 3/4 x13 3/4	Y	Own 36B	5	Own 45C	B2F	R	6.67-8.48	Own 6D	4IA	606	947	a	TD	60	8 1/4 x3 1/4 x 3/8	C
9	.(c.o.e.) WA-114	1350	97	193	15000	4691	6.50/20S	8.25/20D	Own 100A	6-3 3/16 x4 1/2	250	6.7	185	90-2800	7-3x10.8	Y	Own 400B	4	Own 100C	BF	H	4.45-6.83	Own 29D	O4IH	368	587	a	TX	60	8 1/8 x3 1/4 x 1/4	C
10	.(c.o.e.) WA-118	1750	97	193	17000	4968	7.00/20D	9.00/20	Own 110A	6-3 7/8 x4 1/2	270	6.5	200	100-2600	7-3x10.8	Y	Own 401B	4	Own 101C	BF	H	4.45-6.85	Own 29D	O4IH	368	587	a	TX	60	8 1/8 x3 1/4 x 3/8	C
11	.(c.o.e.) WA-120	2175	97	193	19000	6078	7.00/20D	9.00/20	Own 120A	6-3 7/8 x4 1/2	318	6.4	250	110-2600	7-3x10.8	Y	Own 552B	5	Own 102C	BF	H	5.11-7.17	Own 23D	O4IH	499	790	a	TX	72	8x3x1/4	C
12	.(c.o.e.) WA-122	2690	109	193	22000	6468	7.50/20D	10.00/20	Own 140A	6-3 7/8 x5 1/2	362	6.3	285	125-2600	7-3x10.8	Y	Own 551B	5	Own 33C	BF	H	4.75-7.14	Own 30D	O4IH	525	823	a	TX	72	8 1/8 x3 1/4 x 1/4	C
13	.(c.o.e.) WA-126	3450	109	193	26000	7103	9.00/20D	11.00/22	Own 140A	6-3 7/8 x5 1/2	362	6.3	285	125-2600	7-3x10.8	Y	Own 551B	5	Own 43C	B2F	R	7.23-8.73	Own 28D	O4IH	560	875	a	TX	72	8 1/8 x3 1/4 x 1/4	C
14	.(c.o.e.) WA-134	4450	109	193	34000	8237	10.00/20D	12.00/20	Own 140A	6-3 7/8 x5 1/2	362	6.3	285	125-2600	7-3x10.8	Y	Own 551B	5	Own 45C	B2F	R	6.67-9.50	Own 34D	O4IA	622	961	a	TD	72	8 1/4 x3 1/4 x 3/8	C
15	.(c.o.e.) 820	*5400	109	193	26000	z9846	10.00/20D	11.00/22	Own 529A	6-4 5/8 x5 1/4	529	5.0	390	133-2400	7-2 3/4 x13 3/4	Y	Own 58B	5	Own 34C	BF	R	6.29	Own 34D	O4IA	629		TD	72	8 1/8 x3 1/4 x 1/4	C
16	.(c.o.e.) 822	*6400	109	193	30000	z10414	11.00/20D	12.00/24	Own 529A	6-4 5/8 x5 3/4	529	5.0	390	133-2400	7-2 3/4 x13 3/4	Y	Own 58B	5	Own 45C	B2F	R	6.67-8.48	Own 34D	O4IA	603	961	a	TD	72	8 1/8 x3 1/4 x 1/4	C
17	Willys..(18) SC441	330	104	104	3450	1285	5.50/16S	6.00/16S	Own 441	4 3 1/2 x4 3/4	134	6.1	106	61-3800	3-2.3x5.5	N	WG T84G	3	Sal 21-1	3	H	4.9	Own 441	B4IH	130	198	a	2I	32 5/8	4 3/4 x1 3/4 x 1/4	KX
18	.(18) SCOF441P	(18)	104	104	3900	1285	6.00/16S	(18)	Own 441P	4-3 1/2 x4 3/4	134	6.1	106	61-3800	3-2.3x5.5	Y	WG T84G	3	Sal 21-1	3	H	4.9	Own 441P	B4IH	130	198	a	2I	.....	4 3/4 x1 3/4 x 1/4	KX
	Four-Wheel-Drive																														
19	Corbitt...(10) F-12	2375	Opt	Opt	12500	4460	6.50/20D	8.25/20	Con A6244	6-3 1/8 x4 3/8	244	5.4	170	83 3200	4-2 3/8 x6 5/8	N	WG T9	8	Tim 53521H	SF	H	5.14-6.6	Wis F30B	L4IH	270	452	a	TX	Opt	7 3/8 x3 1/2 x 1/4	T
20	.....(10) F-14	3200	Opt	Opt	14500	5060	7.50/20D	8.25/20	Con M6271	6-3 3/8 x4 7/8	371	5.7	191	85 2900	7-2 1/8 x12	N	Cla B116C	8	Tim 54411H	SF	H	5.83-6.8	Wis F544B	L4IH	335	578	a	TD	Opt	8x3 1/2 x 1/4	T
21	.....(10) F-18	4500	Opt	Opt	18500	6900	8.25/20D	9.00/20	Con F-602	6-4 1/4 x4 1/2	361	5.4	252	95-2500	7-2 1/8 x13	N	Fu MGU	8	Wis 5002L	2F	H	6.00-8.21	Wis F501H1	L4IH	335	578	a	TD	Opt	9x2 1/2 x 1/4	T
22	.....(10) F-19	4300	Opt	Opt	19500	6500	8.25/20D	9.00/22	Con M-6330	6-4x4 3/8	330	5.5	238	103-3000	7-2 1/8 x12	Y	Fu 5A330	10	Wis 5002L	2F	H	6.62-8.21	Wis F551H	L4IHV	335	578	a	TD	Opt	8x3 1/2 x 1/4	T
23	.....(10) F-23	5500	Opt	Opt	23500	9000	9.00/20D	9.75/22	Con 20-R	6-4 1/4 x4 3/4	381	4.8	276	106-2600	7-2 3/4 x13	N	Fu 5A430	10	Wis 72300H	2F	H	5.61-8.40	Wis F213H	L4IHV	534	786	a	TD	Opt	8 1/4 x3 1/2 x 1/4	T
24	.....(10) F-27	6800	Opt	Opt	27500	10000	9.75/22D	10.50/22	Con 21-R	6-4 3/4 x4 3/4	428	5.0	325	125-2400	7-2 3/4 x13	N	Fu 5A620	10	Wis 1337BH	2F	H	6.36-8.59	Wis F313H	L4IHV	625	976	a	TD	Opt	12 1/4 x3 1/4 x 1/4	T
25	.....(10) F-35	8500	Opt	Opt	35500	12500	10.50/20D	11.25/24	Con 22-R	6-4 1/2 x5 1/4	501	5.9	400	150-2200	7-2 3/8 x12	N	Fu 5A620	10	Wis 1737KW	2F	H	6.39-9.16	Wis F417KW	Ws4IA	701	976	a	TD	Opt	12 1/4 x3 1/4 x 1/4	T
26	F. W. D.....HS *	2750	132	Opt	15000	5580	7.00/20D	9.00/20	Wau BK	6-3 3/4 x4 1/4	282	5.7	188	85-3200	7-2 3/8 x10 1/4	Y	Fu 5B33	5	Own H	SF	H	7.1-7.85	Own HS	L4IHV	365	578	G	T4	68	8x3 1/4 x 3/8	T
27	.....HH6 *	4450	138	Opt	20000	7900	10.00/20S	10.50/20	Wau MKR	6-4 1/8 x4 3/8	381	5.3	270	91-2400	7-2 3/8 x12 1/2	Y	Fu 5A43	5	Own HU	BF	H	6.7-9.8	Own HU	L4IHV	496	867	G	T4	86	7 1/4 x3x 3/8	C
28	.....CUA *	4640	150	Opt	22000	7800	10.00/20S	10.50/20	Wau MZR	6-4 1/4 x4 3/4	404	5.4	288	96-2400	7-2 3/8 x12 1/2	Y	Fu 5A43	5	Own	BF	H	6.7-8.9	Own	L4IHV	496	867	G	T4	90	7 1/4 x3x 3/8	C
29	.....CU *	4920	150	Opt	22000	8100	10.00/20S	10.50/20	Wau MZR	6-4 1/4 x4 3/4	404	5.4	288	96-2400	7-2 3/8 x12 1/2	Y	Own U	5	Own	BF	H	6.7-8.9	Own	L4IHV	496	867	G	T4	90	7 1/4 x3x 3/8	C
30	.....SUA *	5440	150	Opt	25000	10050	12.00/20S	11.25/20	Wau SRLR	6-4 3/8 x5 1/8	462	5.5	330	112-2400	7-3x13 3/8	Y	Fu 5A62	5	Own	BF	H	6.7-8.9	Own	L4IHV	496	867	G	T4	90	7 1/4 x3x 3/8	C
31	.....SU *	5640	150	Opt	25000	10100	12.00/20S	11.25/20	Wau SRLR	6-4 3/8 x5 1/8	462	5.5	330	112-2400	7-3x13 3/8	Y	Own U	5	Own	BF	H	6.7-8.9	Own	L4IHV	496	867	G	T4	90	7 1/4 x3x 3/8	C
32	.....YU *	6300	150	Opt	27000	10570	11.00/20D	11.25/20	Wau SRKR	6-4 5/8 x5 1/8	517	5.5	369	126-2300	7-3x13 3/8	Y	Own U	5	Own	BF	H	6.7-8.9	Own	L4IHV	496	867	G	T4	90	8 1/4 x3x 3/8	C
33	.....MJ5 *	6700	150	Opt	28000	11200	10.00/20D	12.75/20	Wau SRKR	6-4 5/8 x5 1/8	517	5.5	369	126-2300	7-3x13 3/8	Y	Fu 5A62	5	Wis 1337	2F	H	6.6-8.6	Own	L4IHV	578	976	G	T4	90	10 1/4 x3x 1/2	C
34	.....MJ6 *	7040	150	Opt	30000	11450	11.00/20D	12.75/20	Wau SRKR	6-4 5/8 x5 1/8	517	5.5	369	126-2300	7-3x13 3/8	Y	Own M	10	Wis 1337	2F	H	6.6-8.6	Own 1337	L4IHV	578	976	G	T4	90	10 1/4 x3x 1/2	C
35	.....M7 *	8800	150	Opt	38000	12350	13.00/20S	13.50/20	Wau RBR	6-5x5 1/4	677	5.3	491	152-2400	4-3 1/2 x11 3/8	Y	Own M	10	Wis 1757	2F	H	6.4-8.4	Own 1757	L4IHV	578	976	G	T4	90	10 1/4 x3x 1/2	C
36	.....M10 *	10400	150	Opt	42000	13450	14.00/20S	13.50/24	Her HXE	6-5 3/4 x6	935	5.3	615	198-2000	7-3 1/2 x16 5/8	Y	Wis 1910	10	Wis 1910	2F	H	7.16-9.3	Own 1910	W4IA	665	1030	G	T4	90	10 1/4 x3x 1/2	C
37	.....(T) T26 *	2965	132	Opt	26000	5580	7.50/20D	9.00/20	Wau BK	6-3 3/4 x4 1/4	282	5.7	188	85-3200	7-2 3/8 x10 1/4	Y	Fu 5B330	5	Own H	SF	H	5.45-6.04	Own HS	L4IHV	365	578	G	T4	62	8x3 1/4 x 3/8	C
38	.....(T) T32 *	3995	138	Opt	32000	7050	8.25/20D	9.00/20	Wau MKR	6-4 1/8 x4 3/8	381	5.3	270	98-2400	7-2 3/8 x12 1/2	Y	Fu 5A430	5	Own H	SF	H	6.04-7.1	Own H	L4IHV	365	578	G	T4	68	10x3x1/4	C
39	.....(T) T40 *	5450	134	Opt	40000	10500	10.00/20D	10.50/22	Wau SRKR	6-4 5/8 x5 1/8	517	5.5	369	126-2300	7-3x13 3/8	Y	Fu 5A620	5	Own	BF	H	7.3-11.2	Own	L4IHV	568	868	G	T4	71	10x3x1/4	C
40	.....(T) T45 *	7725	134	Opt	45000	11140	11.00/24D	10.50/24	Wau RBR	6-5x5 3/4	677	5.3	491	152-2400	4-3 1/2 x11 3/8	Y	BL 7481	8	Own	BF	H	**-8.3	Own	W4IA	512	867	G	T4	71	10x3x1/4	C
41	Hug.....44-4	5425	150	160	24000	9600	10.50/20S	10.50/20	Wau 6SRL	6-4 3/4 x5 1/8	462	4.6	327	112-2200	7-3x12 3/8	Y	Fu 5A620	5	Wis 72000	2F	H	5.00-7.27	Wis F213	L4IHV	536	864	a	TD	70 3/4	9 1/2 x3x 1/4	T
42	.....D-44-4	6840	150	160	24000	9600	10.50/20S	10.50/20	Bud 6LD468	6-4 1/4 x5 1/2	468	12	345	114-2000	7-3x11 1/2	Y	Fu 5A620	5	Wis 72000	2F	H	5.00-7.27	Wis F213	L4IHV	536	864	A	TD	70 3/4	9 1/2 x3x 1/4	T
43	45-4	6125	150	160	29000	11000	10.50/20S	10.50/20	Wau 6SRK	6-4 3/4 x5 1/8	517	4.5	365	125-2200	7-3 1/8 x13 1/8	Y	Fu 5A620	5	Wis 1337	2F	H	5.53-8.59	Wis F313	L4IHV	625	972	a	TD	70 3/4	9 1/4 x3x 1/4	T
44	.....D-45-4	7500	150	160	29000	11045	10.50/20S	10.50/20	Bud 6LD468	6-4 1/4 x5 1/2	468	12	345	114-2000	7-3x11 1/2	Y	Fu 5A620	5	Wis 1337	2F	H	5.53-8.59	Wis F313	L4IHV	625	972	A	TD	70 3/4	9 1/4 x3x 1/4	T
45	46-4	8050	160	170	35000	11800	11.25/20S	11.25/20	Wau 6GAL	6-5x5 1/2	648	4.6	468	132-1800	7-4x18 5/8	Y	Spl 7351	5	Wis 1737	2F	H	5.75-9.16	Wis F417	W4IA	654	972	a	TD	86 1/2	10x3x3/8	T
46	.....D-46-4	9025	160	170	35000	11800	11.25/20D	11.25/20	Cum HB6	6-4 7/8 x6	672	17	500	150-1800	7-4 1/2 x16 1/2	Y	Spl 7351	4 5	Wis 1737	2F	H	5.75-9.16	Wis F417	W4IA	654	972	A	TD	86 1/2	10x3x3/8	T
47	Kenworth.....539	6118	134	146	24000	10180	9.00/20D	9.75/24	Bud K428	6-4 3/8 x4 3/4	428	5.3	302	108-2400	7-3x11 1/4	Y	Fu 5A62	5	Wis 72300	2F	H	5.77-8.40	Wis F207	L4IHV	458	785	a	PD	72	7 1/2 x3 1/4 x 1/2	C
48	540	7251	134	146	27700	10310	9.75/20D	9.75/24	Bud K428	6-4 3/8 x4 3/4	428	5.3	302	108-2400	7-3x11 1/4	Y	Fu 5A62	5	Wis 1337	2F	H	6.85-9.41	Wis F323	Ws4IA	648	975	a	PD	72	7 1/2 x3 1/4 x 1/2	C
49	541	7835	134	146	27700	10650	9.75/20D	9.75/24	Bud LO525	6-4 1/2 x5 1/2	525	5.5	385	135-2200	7-3x11 1/4	Y	Fu 5A62	5	Wis 1337	2F	H	6.85-9.41	Wis F323	Ws4IA	648	975	a	PD	72	7 1/2 x3 1/4 x 1/2	C
50	542	8412	134	146	35000	10935	10.50/20D	10.50/24	Bud LO525	6-4 1/2 x5 1/2	525	5.5	385	135-2200	7-3x11 1/4	Y	Fu 5A62	5	Wis 1757	2F	H	6.02-8.50	Wis F427	Ws4IA	648	975	a	PD	72	7 1/2 x3 1/4 x 1/2	C
51	Marmon-(c) LD5-4	1567	113	113	4500	2659	7.50/15S	9.00/15S	Ford V8	8-3 1/4 x3 3/4	221	6.1	155	85-3800	3-2.5x5 3/4	N	Ford	4	Ford	8 3/4	U	**-4.44	Own LD5	FO4IH	162	264	ac	2I	38	5 1/4 x2x.11	TDx
52	Herr..(c) OT4-4	1808	123	123	6800	3331	7.00/18S	9.75/18S	Ford V8	8-3 1/4 x3 3/4	221	6.1	155	85-3800	3-2.5x5 3/4	N	Ford	4	Ford	SF	H	*-4.86	Own OT4	FO4IH	201	308	ac	2I	48	6x2 1/4 x 1/4	T
53	.....(c) JJ5-4	1645	134	134	13200	3959	6.00/20D	10.50/18S	Ford V8	8-3 1/4 x3 3/4	239	6.1	170	95-3600	3-2.5x5 3/4	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-11	FO4IH	303	506	ac	TX	60	7x2 3/4 x 1/2	T
54	.....(c) JJ6-4	1694	158	158	13200	4039	6.00/20D	10.50/18S	Ford V8	8-3 1/4 x3 3/4	239	6.1	170	95-3600	3-2.5x5 3/4	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-11	FO4IH	303	506	ac	TX	84	7x2 3/4 x 1/2	T
55	(c) (c.o.e.) JJ5-4	1874	134	134	13200	3994	6.00/20D	8.25/18	Ford V8	8-3 1/4 x3 3/4	239	6.1	170	95-3600	3-2.5x5 3/4	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-12	FO4IH	303	506	ac	TX	93	7x2 3/4 x 1/2	T
56	(c) (c.o.e.) JJ6-4	1905	158	158	13200	4074	6.00/20D	8.25/18	Ford V8	8-3 1/4 x3 3/4	239	6.1	170	95-3600	3-2.5x5 3/4	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-12	FO4IH	303	506	ac	TX	117	7x2 3/4 x 1/2	T
57	.....DSD100-4 *	3375	143	Op	13200	5070	6.50/20D	7.50/20	Her JXB	6-3 5/8 x4 1/4	263	5.4	182	78-2800	7-2 1/2 x10 1/4	N	WG T9WG	4	Tim MH1011	SF	H	*-6.6	TWH 101	L4IH	267	452	a	TX	60	7 1/4 x2 1/2 x 3/8	C
58	.....DSD200-4 *	3635	143	Op	13200	5305	7.00/20D	7.50/20	Her JXC	6-3 3/4 x4 1/4	282	5.3	196	84-2800	7-2 1/2 x10 1/4	N	Ful 5A33	5	Tim MH1011	SF	H	*-6.6	TWH 101	L4IH	267	452	a	TX	60	7 1/4 x2 1/2 x 3/8	C
59	.....DSD300-4 *	3980	143	Op	15900	5795	7.50/20D	8.25/20	Her JXD	6-4x4 1/4	320	5.3	224	95-2800	7-2 1/2 x10 1/4	N	Ful 5A33	5	Tim MH1022	SF	H	*-6.8	TWH 102	L4IH	281	527	a	TX	60	7 1/4 x2 1/2 x 3/8	C
60	.....DSD400-4 *	5275	158	Op	19500	7812	8.25/20D	9.00/20	Her WXC3	6-4 1/4 x4 1/2	383	5.0	260	106-2800	7-2 3/8 x13 1/4	Y	Ful 5A430	5	Tim MH1033	SF	H	*-6.83	TWH-103	L4IH	342	578	a	FD	72	9 1/4 x3x 1/4	C
61	.....DSD500-4 *	5860	158	Op	23400	8710	9.00/20D	9.75/20	Her WXLC3	6-4 1/4 x4 3/4	404	5.0	293	118-2800	7-2 3/8 x13 1/4	Y	Ful 5A430	5	Tim MH1044	SF	H	*-7.8	TWH 104	L4IH	384	785	a	FD	72	9 1/4 x3x 1/4	C
62	.....DSD550-4 *	6440	158	Op	23400	8970	9.00/20D	9.75/20	Her RXB	6-4 1/2 x5 1/4	501	4.5	330	110-2200	7-3x13 1/4	Y	Ful 5A620	5	Tim MH1044	SF	H	*-7.8	WH 104	L4IH	384	785	a	FD	72	9 1/4 x3x 1/4	C
63	...DSD550DR-4 *	7350	158	Op	23400	9980	9.00/20D	9.75/20	Her RXB	6-4 1/2 x5 1/4	501	5.4	360	121-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1066	2F	H	*-7.52	WH 106	L4IH	738	975	a	FD	72	9 1/4 x3x 1/4	C
64	.....DSD600-4 *	7700	161	Op	23400	9730	9.00/20D	9.75/20	Her RXB	6-4 1/2 x5 1/4	501	5.4	360	121-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1055	2F	H	*-7.21	WH 105	L4IH	461	785	a	FD	72	9 1/4 x3x 1/4	C
65	.....DSD700-4 *	8895	161	Op	25200	10330	9.75/20D	9.75/22	Her RXB	6-4 1/2 x5 1/4	501	5.4	360	121-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1077	2F	H	*-7.52	WH 107	Ws4IA	738	975	a	FD	72	10 1/4 x3x 1/4	C
66	.....DSD800-4 *	9750	161	Op	30000	10880	10.50/20D	10.50/22	Her RXC	6-4 1/2 x5 3/4	529	4.9	390	131-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1088	2F	H	*-8.23	WH 108	Ws4IA	738	975	a	FD	72	10 1/4 x3x 1/4	C
67	.....DSD900-4 *	12785	198	Op	30000	13530	10.50/20D	10.50/22	Her RXD	6-5 1/4 x6	855	4.5	555	180-2200	7-3 1/2 x16 5/8	Y	Ful 4A86	4	Wis MH1088	2F	H	*-8.23	WH 108	Ws4IA	738	975	a	FD	102	10 1/4 x3x 3/8	CP
68	.....D8D1000-4 *	13850	198	Op	40000	15680	10.50/24D	10.50/24	Her HXE	6-5 1/4 x6	935	4.5	610	198-2200	7-3 1/2 x16 5/8	Y	Ful 4A86	4	Wis MH1099	2F	H	*-8.88	WH 109	Ws4IA	738	975	a	FD	102	10 1/4 x3x 3/8	C
69	(D) DDSD200-4 *	4920	143	Op	13200	5705	7.50/20D	7.50/20	Her DJXB	6-3 1/2 x4 1/2	260	14	178	79-2600	7-3x10 1/2	N	Ful 5A33	5	Tim MH1011	SF	H	*-5.66	TWH 101	L4IH	267	452	a	TX	60	7 1/4 x2 1/2 x 3/8	C
70	(D) DDSD300-4 *	5155	143	Op	15900	6185	7.50/20D	8.25/20	Her DJXC	6-3 3/4 x4 1/2	298	14	208	83-2600	7-3x10 1/2	N	Ful 5A33	5	Tim MH1022	SF	H	*-5.83	TWH 102	L4IH	281	527	a	TX	60	7 1/4 x2 1/2 x 3/8	C
71	D DDSD550DR-4 *	9640	158	Op	23400	10590	9.00/20D	9.75/20	Her DRXB	6-4 1/2 x5 1/4	474	14	350	124-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1066	2F	H	*-6.65	WH 106	L4IH	738	975	a	FD	72	9 1/4 x3x 1/4	C
72	(D) DDSD700-4 *	11350	161	Op	25200	10940	9.75/20D	9.75/22	Her DRXB	6-4 1/2 x5 1/4	474	14	350	124-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1077	2F	H	*-6.65	WH 107	Ws4IA	738	975	a	FD	72	10 1/4 x3x 1/4	C
73	(D) DDSD800-4 *	12150	161	Op	30000	11465	10.50/20D	10.50/22	Her DRXB	6-4 3/4 x5 1/4	474	14	350	124-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1088	2F	H	*-7.0	WH 108	Ws4IA	738	975	a	FD	72	10 1/4 x3x 1/4	C
74	(D) DDSD900-4 *	15310	198	Op	30000	14230	10.50/20D	10.50/22	Her DHXB	6-5x6	707	14	530	176-1800	7-3 1/4 x17	Y	Ful 4A86	4	Wis MH1088	2F	H	*-7.22	WH 108	Ws4IA	738	975	a	FD	102	10 1/4 x3x 3/8	P
75	(D) DDSD1000-4 *	16105	198	Op	40000	16405	10.50/24D	10.50/24	Her DHXB	6-5x6	707	14	530	176-1800	7-3 1/4 x17	Y	Ful 4A86	4	Wis MH1099	2F	H	*-7.95	WH 109	Ws4IA	738	975	a	FD	102	10 1/4 x3x 3/8	P

* Includes price of cab. z Includes weight of cab.

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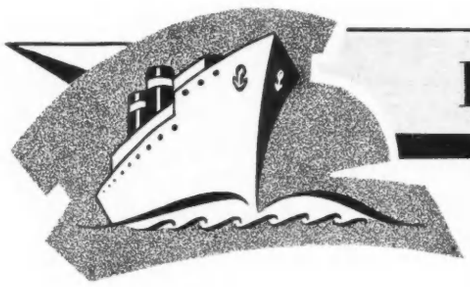
1941 Truck Specifications

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals un-less noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANS-MISSION: Make and Model	TRANS-MISSION: Forward Sp'ds	REAR AXLE: Make and Model	REAR AXLE: Gear and Type	REAR AXLE: Drive & Torque	REAR AXLE: Gear Ratio, Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make, Location, Type Operat'n	BRAKES SERVICE: Lining Area	BRAKES SERVICE: Drum Area	BRAKES SERVICE: Drum Material	BRAKES: Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME: Side Rail Dimensions	FRAME: Type
	International Cont.																														
1	DR-426-F 4R	7500	161	233	42000	13080	9.75/20	10.50/20	Own FBB450A	6-4⅜x5	451	5.2	331	120–2400	7-2 43/64x11 33/64	Y	Own F54B	5	Own RF1701	2	FB HT	6.52–10.9	Own F800	T6IA	801	1192	G	PD	84	11¼x3⅜x3⅜	T
2	(D)DRD-426-F 4R	9030	161	233	42000	14580	9.75/20	10.50/20	Cum HB600	6-4⅞x6	672	17	500	150–1800	7-4½x16½	Y	Own F54B	5	Own RF1701	2	FB HT	6.52–10.9	Own F800	T6IA	801	1192	G	PD	84	11¼x3⅜x3⅜	T
3	AR-626-F 4R	12500	180	253	62000	18155	9.75/24	11.25/24	Own FEB	6-5x5½	648	4.4	460	140–2100	7-3⅛x17⅜	Y	Own H7	5	Own 1585	2	FB HT	5.27–11.39	Own F910	T6IA	102	1520	G	PD	92	14x3½x¾	TL
4	(D)ARD626F 4R	13485	180	253	62000	18300	9.75/24	11.25/24	Cum HB600	6-4⅞x6	672	17	500	150–1800	7-4½x16½	Y	Own H7	5	Own 1585	2	FB HT	5.97–11.39	Own F910	T6IA	102	1520	G	PD	92	14x3½x¾	TL
5	Ken-...(D) 509 4R	7046	212	254	35000	10350	9.00/20D	9.75/22	Cum HB4	4-4⅞x6	448	17	335	100–1800	7-4½x11½	Y	Fu 5A620	5	Tim SW252	WF	R	6.20–9.25	Tim 35100	L6IHV	668	1192	a	TD	102	7½x3¾x½	C
6	worth...(D) 510 2F	8697	221	247	39000	12630	9.00/22D	9.75/22	Cum HB6	6-4⅞x6	672	17	500	150–1800	7-4½x16½	Y	BL 7641	4	Tim T18000	CF	R	6.04–10.5	Tim 36000	Ws4rIA	692	1030	a	TD	134	9½x3¾x⅝	C
7	....(D) 512 4R	8334	205	235	38000	13500	9.00/20D	9.75/22	Cum HB6	6-4⅞x6	672	17	500	150–1800	7-4½x16½	Y	BL 7641	4	Tim SW252	WF	R	6.20–9.25	Tim 36000	Ws4rIA	800	1194	a	TD	120	9½x3¾x⅝	C
8	....(D) 520 2F	7886	214	239	40300	12200	9.00/20D	10.50/22	Cum HB6	6-4⅞x6	672	17	500	150–1800	7-4½x16½	Y	BL 7641	4	Tim 75738	2F	H	6.85–9.41	Tim 36000	Ws4rIA	782	1158	a	TD	127	9½x3¾x⅝	C
9	....(D) 522 2F	8061	214	239	46000	12150	9.00/20D	10.50/22	Cum HB6	6-4⅞x6	672	17	500	150–1800	7-4½x16½	Y	BL 7641	4	Tim 76793	2F	H	6.02–9.2	Tim 36000	Ws4rIA	782	1158	a	TD	127	9½x3¾x⅝	C
10	....(D) 523 4R	9149	214	239	42000	13700	9.00/20D	10.50/24	Cum HB6	6-4⅞x6	672	17	500	150–1800	7-4½x16½	Y	BL 7641	4	Tim SW352	WF	R	5.40–10.2	Tim 36000	Ws4rIA	800	1194	a	TD	127	9½x3¾x⅝	C
11	....(D) 524 4R	9410	214	239	54000	14700	9.75/20D	10.50/24	Cum HB6	6-4⅞x6	672	17	500	150–1800	7-4½x16½	Y	BL 7641	4	Tim SW452	WF	R	6.0–11.7	Tim 36000	Ws4rIA	980	1450	a	TD	127	9½x3¾x⅝	C
12	.....527 4R	5942	204	234	35000	11000	9.00/20D	9.75/22	Bud LO525	6-4½x5½	525	5.5	385	135–2200	7-3x11½	Y	Fu 5A-620	5	Tim SW-252	WF	R	6.20–9.25	Tim 35100	Ws4rIA	800	1194	a	TD	120	7½x3¾x½	C
13	.....528 4R	7289	211	236	39000	12400	9.75/20D	10.50/24	Bud LO525	6-4½x5½	525	5.5	385	135–2200	7-3x11½	Y	Fu 5A-620	5	Tim SW-352	WF	R	5.40–10.2	Tim 35100	Ws4rIA	800	1194	a	TD	127	7½x3¾x½	C
14	....(D) 546 4R	6909	204	234	33500	10950	9.00/20D	9.75/22	Cum AA6	6-4x5	377	17	270	100–2200	7-3⅞x	Y	Fu 5A-430	5	Tim SW252	WF	R	6.20–9.25	Tim 32502	L6IHV	636	1093	a	TX	120	7½x3¾x½	C
15	.....556 4R	5429	204	234	35000	10750	9.00/20D	9.75/22	Her WXLC3	6-4¾x4¾	404	5.5	294	118–2800	7-2⅝x10 21/32	Y	Fu 5A430	5	Tim SW252	WF	A	5.00–11.0	Tim 35100	L4rIHV	800	1194	a	TX	120	7½x3¾x½	C
16	Marmon-Herr.																														
17	..... DSD200-6 *	5980	167	Op	19500	8065	7.00/20D	7.00/20	Her JXC	6-3¾x4¼	282	5.3	196	84–2800	7-2½x10 13/32	N	Ful 5A33	5	Wis MH1100	2F	R	*–7.36	WH 110	L6IH	549	930	a	TX	84	7 11/32x2½x¼	P
18	..... DSD300-6 *	6700	167	Op	25500	9025	7.50/20D	8.25/20	Her JXD	6-4x4¼	320	5.3	224	95–2800	7-2½x10 13/32	N	Ful 5A33	5	Wis MH1111	2F	R	*–7.66	WH 111	L6IH	600	1055	a	TX	84	7 11/32x2½x¼	P
19	..... DSD400-6 *	7700	158	Op	26500	9600	8.25/20D	9.00/20	Her WXC3	6-4¼x4½	383	5.0	260	106–2800	7-2⅝x13¼	Y	Ful 5A430	5	Wis MH1111	2F	R	*–9.33	WH 111	L6IH	600	1055	a	FD	72	9 11/32x3¼	P
20	..... DSD500-6 *	9015	158	Op	32500	10400	8.25/22D	9.00/20	Her WXLC3	6-4¾x4¾	404	5.0	293	118–2800	7-2⅝x13¼	Y	Ful 5A430	5	TW MH1133	2F	R	*–9.33	WH 113	Ws6IA	726	1300	a	FD	72	9 11/32x3¼	P
21	..... DSD600-6 *	10570	173	Op	32500	12200	9.00/20D	9.00/20	Her RXB	6-4½x5¼	501	5.4	330	110–2200	7-3x13¼	Y	Ful 5A620	5	TW MH1133	2F	R	*–8.43	WH 113	Ws6IA	726	1300	a	FD	84	9 11/32x3¼	P
22	..... DSD800-6 *	11920	173	Op	42000	14475	9.75/20D	9.75/22	Her RXC	6-4⅝x5¼	529	4.9	390	131–2200	7-3x13¼	Y	Ful 5A620	5	TW MH1144	2F	R	*–8.14	WH 114	Ws6IA	1056	1626	a	FD	84	10 1/16x3x⅝	P
23	..... DSD900-6 *	14000	192	Op	42000	17590	9.75/20D	9.75/22	Her HXD	6-5½x6	855	4.5	555	180–2200	7-3½x16⅝	Y	Ful 4A86	4	TW MH1144	2F	R	*–8.14	WH 114	Ws6IA	1056	1626	a	FD	96	10 1/16x3x⅝	P
24	..... DSD1000-6 *	16000	198	Op	52000	19200	10.50/20D	10.50/24	Her HXE	6-5⅜x6	935	4.5	610	198–2200	7-3½x16⅝	Y	Ful 4A86	4	TW MH1155	2F	R	*–9.11	WH 115	Ws6IA	1056	1626	a	FD	102	10 1/16x3x⅝	P
25	(D) DDSD200-6 *	7255	167	Op	19500	8465	7.00/20D	7.00/20	Her DJXB	6-3½x4½	260	14.	178	79–2600	7-3x10 5/32	N	Ful 5A33	5	W MH1100	2F	R	*–6.66	WH 110	L6IH	549	930	a	TX	84	7 11/32x2½x¼	P
26	(D) DDSD300-6 *	7975	167	Op	25500	9425	7.50/20D	8.25/20	Her DJXC	6-3¾x4½	298	14.	208	83–2600	7-3x10 5/32	N	Ful 5A33	5	W MH1111	2F	R	*–6.41	WH 111	L6IH	600	1055	a	TX	84	7 11/32x2½x¼	P
27	(D) DDSD600-6 *	13025	173	Op	32500	12800	9.00/20D	9.00/20	Her DRXB	6-4⅛x5¼	474	14.	350	124–2200	7-3x13¼	Y	Ful 5A620	5	TW MH1133	2F	R	*–7.66	WH 113	Ws6IA	726	1300	a	FD	84	9 11/32x3¼	P
28	(D) DDSD800-6 *	14375	173	Op	42000	15060	9.75/20D	9.75/22	Her DRXB	6-4⅛x5¾	474	14.	350	124–2200	7-3x13¼	Y	Ful 5A620	5	TW MH1144	2F	R	*–8.14	WH 114	Ws6IA	1056	1626	a	FD	84	10 1/16x3x⅝	P
29	(D) DDSD900-6 *	16650	192	Op	42000	18325	9.75/20D	9.75/22	Her DHXB	6-5x6	707	14.	530	176–1800	7-3½x17	Y	Ful 4A86	4	TW MH1144	2F	R	*–8.14	WH 114	Ws6IA	1056	1626	a	FD	96	10 1/16x3x⅝	P
30	(D) DDSD1000-6 *	18400	198	Op	52000	19950	10.50/20D	10.50/24	Her DHXB	6-5x6	707	14.	530	176–1800	7-3½x17	Y	Ful 4A86	4	TW MH1155	2F	R	*–8.14	WH 115	Ws6IA	1056	1626	a	FD	102	10 1/16x3x⅝	P
31	.....(c) JJ5-6 *	2670	156	156	22000	5474	6.00/20D	10.50/18S	Ford V8	8-3 1/16x3½	239	6.1	170	95–3600	3-2.5x5 3/32	N	Ford	4	Tim Ford	SF	R	**–6.67	Own IX4-11	FO6IH	503	836	ac	TX	82 1/16	7½x3¾x¼	TL
32	.....(c) JJ6-6 *	2717	180	180	22000	5595	6.00/20D	10.50/18S	Ford V8	8-3 1/16x3½	239	6.1	170	95–3600	3-2.5x5 3/32	N	Ford	4	Tim Ford	SF	R	**–6.67	Own IX4-11	FO6IH	503	836	ac	TX	106 1/16	7½x3¾x¼	TL
33	(c) (e.o.e.) JJ5-6 *	2899	156	156	22000	5508	6.00/20D	8.25/18	Ford V8	8-3 1/16x3½	239	6.1	170	95–3600	3-2.5x5 3/32	N	Ford	4	Tim Ford	SF	R	**–6.67	Own IX4-12	FO6IH	503	836	ac	TX	116	7½x3¾x¼	TL
34	(c) (e.o.e.) JJ6-6 *	2940	180	180	22000	5630	6.00/20D	8.25/18	Ford V8	8-3 1/16x3½	239	6.1	170	95–3600	3-2.5x5 3/32	N	Ford	4	Tim Ford	SF	R	**–6.67	Own IX4-12	FO6IH	503	836	ac	TX	139	7½x3¾x¼	TL
	Sterling																														
35	(16)HBT128 2F	4840	181	227	32000	10625	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4⅝	404	5.3	286	99–2400	7-2⅝x12½	Y	Fu 5A430	5	TimSBT252H	SF	L	5.57–7.80	Tim 35000N	L4rIHV	504	968	a	TX	102	9x3¼x¼	D
36	(15-16)HWS128 4R	5325	181	227	32000	10775	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4⅝	404	5.3	286	99–2400	7-2⅝x12½	Y	Fu 5A430	5	Tim SW251H	WF	L	6.20–10.40	Tim 35000N	L4rIHV	504	968	a	TX	102	9x3¼x¼	D
37	(15-16)JWS160 4R	8165	201	241	40000	12775	9.75/20D	10.50/20	Wau6SRKR	6-4⅜x5⅛	517	5.5	368	125–2300	7-3x13¼	Y	Fu 5A62	5	TimSW352W	WF	L	6.00–10.67	Tim 26452N	Ws4rIA	800	1348	a	TX	122	9x3¼x¼	D
38	(15-16)HWS23584R	9090	201	241	50000	13575	10.50/20D	10.50/24	Wau6SRKR	6-4⅜x5⅛	517	5.5	368	125–2300	7-3x13¼	Y	Fu 5A62	5	TimSW452W	WF	L	6.00–10.25	Tim 27452N	Ws4rIA	800	1316	a	TX	122	9¼x3⅝x⅜	D
39	(16)HCS235 4R	10820	211	251	52000	15250	9.75/22D	10.50/24	Wau6SRKR	6-4⅜x5⅛	517	5.5	369	125–2300	7-3x13¼	Y	Fu 5A62	15	OwnSR255W	CD	R	10.73-13.25	Tim 27452N	Ws4rIA	868	1368	s	JX	123	9¼x3⅝x⅜	D
40	(16)HCS265 4R	12350	211	251	60000	16400	10.50/20D	11.25/24	Wau 6RBR	6-5x5¼	677	5.3	492	152–2200	4-3½x11	Y	Fu 4B86	12	OwnSR265W	CD	R	10.76-13.56	Tim 27452N	Ws4rIA	868	1368	s	JX	123	9¼x3⅝x⅜	D
41	(16)HCS297 4R	13850	211	251	70000	18300	10.50/24†S	11.25/24‡S	Wau 6RBR	6-5x5¼	677	5.3	492	152–2200	4-3½x11	Y	Fu 4B86	12	OwnSR330W	CD	R	10.76-15.37	Tim 27452N	Ws4rIA	988	1552	a	JX	123	9¼x3⅝x⅜	Y
42	(16)HCS330 4R	15200	180	180	80000	20100	10.50/24††S	11.25/24‡‡S	Wau 6RBR	6-5x5¼	677	5.3	492	152–2200	4-3½x11	Y	Fu 4B86	12	OwnSR330W	CD	R	10.76-15.37	Tim 27451N	Ws4rIA	988	1552	a	JX	99	12x3½x⅜	Y
	Truckstell																														
43	(e)TRC-2X400 2F	1859	157	218	26000	6100	7.50/20xD	8.25/20	Chev	6-3 3/16x3 13/16	235	6.61	192	93–3000	4-2 3/16x5 1/16	N	Chev	4	Eat 1465	SFd	H	6.5–9.02	Chev	B6IHV	511	729	a	2I	83	7½x3x 11/16	C
44	(e)TRC-2X400 2F	2113	154	204	27000	6250	7.50/20xD	8.25/20	Chev	6-3 3/16x3 13/16	235	6.61	192	93–3000	4-2 3/16x5 1/16	N	Chev	4	Eat 1465	SFd	H	6.5–9.02	Chev	B6IHV	511	729	a	2I	83	7½x3x 11/16	C
45	(e)TRC-4XC26C 4R	2114	141	212	26000	6500	7.50/20xD	8.25/20	Chev	6-3 3/16x3 13/16	235	6.61	192	93–3000	4-2 3/16x5 1/16	N	Chev-0	8	Chev	SFd	H	**–6.4	Chev	C61HV	511	729	a	2I	66	7½x3x 11/16	C
46	(e)TRC-4XC27C 4R	2363	116	186	27000	6690	7.50/20xD	8.25/20	Chev	6-3 3/16x3 13/16	235	6.61	192	93–3000	4-2 3/16x5 1/16	N	Chev-0	8	Chev	SFd	H	**–6.4	Chev	C61HV	511	729	a	2I	71	7½x3x 11/16	C
47	(e)TRF-2X250 2F	1694	155	252	22000	5900	7.00/20xD	8.25/20	Ford	8-3 1/16x3 1/16	239	6.2	170	95–3600	3-2.5x4.7	N	Ford	4	Eat 1350	SFd	H	5.83–8.57	Ford	F6IHV	501	836	a	TX	81½	7½x3x 13/16	C
48	(e)TRF-2X400 2F	1837	156	253	26000	6000	7.50/20xD	8.25/20	Ford	8-3 1/16x3 1/16	239	6.2	170	95–3600	3-2.5x4.7	N	Ford	4	Eat 1460	SFd	H	6.5–9.02	Ford	F6IHV	501	836	a	TX	83	7½x3x 13/16	C
49	(e)TRF-2X250 2F	1969	122	241	23000	5950	7.00/20xD	8.25/20	Ford	8-3 1/16x3 1/16	239	6.2	170	95–3600	3-2.5x4.7	N	Ford	4	Eat 1350	SFd	H	5.83–8.57	Ford	F6IHV	501	836	a	TX	81½	7½x3x 13/16	C
50	(e)TRF-2X400 2F	2112	123	242	27000	6050	7.50/20xD	8.25/20	Ford	8-3 1/16x3 1/16	239	6.2	170	95–3600	3-2.5x4.7	N	Ford	4	Eat 1460	SFd	H	6.5–9.02	Ford	F6IHV	501	836	a	TX	83	7½x3x 13/16	C
51	(e)TRF-4XF26F 4R	2168	143	210	26000	6600	7.50/20xD	8.25/20	Ford	8-3 1/16x3 1/16	239	6.2	170	95–3600	3-2.5x4.7	N	Ford-0	8	Ford	SFd	H	6.88–7.87	Ford	F6IHV	501	836	a	TX	67¼	7½x3x 13/16	C
52	(e)TRF-4XF29E 4R	2455	143	210	29000	7200	7.50/20xD	8.25/20	Ford	8-3 1/16x3 1/16	239	6.2	170	95–3600	3-2.5x4.7	Y	Ford-0	8	Eat 1350	SFd	H	6.88–9.56	Ford	F6IHV	501	836	a	TX	67¼	7½x3x 13/16	C
53	(e)TRF-4XF27F 4R	2452	117	180	27000	6720	7.50/20xD	8.25/20	Ford	8-3 1/16x3 1/16	239	6.2	170	95–3600	3-2.5x4.7	N	Ford-0	8	Ford	SFd	H	6.88–7.87	Ford	F6IHV	501	836	a	TX	77¼	7½x3x 13/16	C
54	(e)TRF-4XF30E 4R	2738	117	180	30000	7380	7.50/20xD	8.25/20	Ford	8-3 1/16x3 1/16	239	6.2	170	95–3600	3-2.5x4.7	Y	Ford-0	8	Eat 1350	SFd	H	6.88–9.56	Ford	F6IHV	501	836	a	TX	77¼	7½x3x 13/16	C
55	White WA2064 4R	3250	160	214	27000	7550	7.00/20D	8.25/20	Own 120A	6-3 7/16x4½	318	6.4	250	110–2600	7-3x10.8	Y	Own 552B	5	TimSBD1000	BF	T	5.93–8.30	Own 49D	O6IH	513	.....	.....	TX	84¼	8x3x 1/16	
56	WA2264 4R	4500	160	214	36000	9920	9.00/20D	10.00/20	Own 140A	6-3 7/16x5 1/16	362	6.3	285	125–2600	7-3x10.8	Y	Own 551B	5	TimSBD1500	BF	T	5.41–9.03	Own 40D	O6IH	718	.....	.....	TX	84¼	8 1/16x3 1/16x 1/16	
57	WA3464 4R	5750	160	214	40000	10702	9.00/20D	10.00/22	Own 140A	6-3 7/16x5 1/16	362	6.3	285	125–2600	7-3x10.8	Y	Own 551B	5	Tim SD3000	B2F	T	6.84–10.22	Own 50D	O6IA	1082	.....	.....	TX	84¼	8 1/16x3 1/16x 1/16	
58	.....920 4R	7250	158	235	40000	11921	9.00/20D	11.00/22	Own 529A	6-4 5/16x5 1/16	529	5.0	390	133–2400	7-2 1/16x13 3/16	Y	Own 36B	5	Tim SD3000	B2F	T	6.84–10.22	Own 50D	O6IA	1082	.....	.....	TD	83¾	8 1/16x3 1/16x 1/16	
59	.....922 4R	8750	158	235	45000	13821	10.00/20D	12.00/24	Own 529A	6-4 5/16x5 1/16	529	5.0	390	133–2400	7-2 1/16x13 3/16	Y	Own 36B	5	Tim SD454	B2F	T	7.33–10.27	Own 12D	O6IA	1079	.....	.....	TD	83¾	8 1/16x3 1/16x 5/16	

† Rear 11.25/24. †† Rear 12.00/24. ‡ Rear 12.75/24. ‡‡ Rear 13.50/24. x Front 7.00/20. * Prices include chassis and cab.

(For abbreviations see page 225)



EXPORTS

Leading Automotive Export Markets-1940

(U. S. Factory Shipments Only—Does Not Include Canadian Exports)

Passenger Cars and Chassis

Country of Destination	Value	Units
Canada	$9,685,970	14,340
Mexico	6,730,997	8,976
Union of South Africa	6,299,696	10,859
Argentina	6,202,843	10,804
Brazil	4,791,709	8,198
Hawaii	3,572,798	4,869
Venezuela	2,835,322	4,022
Puerto Rico	2,508,241	3,408
Australia	2,068,790	5,162
Cuba	1,899,579	2,517
Philippine Islands	1,798,759	2,468
Colombia	1,746,316	2,252
Peru	1,301,477	1,807
British India	990,352	1,648
Egypt	956,040	1,366
Chile	938,551	1,243
Netherlands Indies	897,138	1,320
China	818,544	1,196
Panama, Republic of	625,834	860
Belgium	563,435	1,162
Total	$57,232,391	88,477
Total all countries	$63,766,211	97,586

Trucks, Buses and Chassis

Country of Destination	Value	Units
France	$17,253,911	9,733
United Kingdom	13,610,063	4,436
Union of South Africa	4,312,698	9,838
Canada	3,831,448	2,005
British India	3,770,901	9,504
Argentina	3,713,978	7,242
Venezuela	3,324,902	4,107
Egypt	3,137,583	3,747
Brazil	2,989,432	5,523
Mexico	2,862,342	4,418
Finland	2,283,243	3,241
Netherlands Indies	2,171,561	4,673
Colombia	1,492,806	1,666
Australia	1,373,805	2,770
Hawaii	1,366,571	1,303
Philippine Islands	1,325,077	1,951
Iran	1,265,584	339
Belgium	1,245,767	3,241
Sweden	1,215,599	3,533
Puerto Rico	1,197,552	1,581
Total	$73,744,821	84,851
Total all countries	$91,324,669	107,040

Value of Leading U. S. Automotive Exports

Passenger Cars (new)	$63,766,211
Passenger Cars (used)	1,194,337
Trucks, Buses and Chassis (new)	91,324,669
Trucks, Buses and Chassis (used)	227,723
Trailers	683,020
Engines for Assembly:	
Truck and Bus	2,121,875
Passenger Car	1,554,133
Engines for Replacement	325,657
Parts for Assembly	55,182,641
Parts for Replacement	45,828,852
Auto Accessories	5,839,556
Pumps for Gas and Oil	659,223
Other Auto Service Equipment	3,563,149
Motorcycles	4,253,766
Motorcycle Parts and Accessories	481,167
Storage Batteries	2,206,753
Battery Chargers	258,536
Portable Electric Tools	1,757,888
Truck and Bus Casings	15,716,417
Auto Casings	7,155,371
Inner Tubes	2,442,621
Solid Tires	146,980
Tire Sundries and Repair Material	833,983
Aeronautical Products	312,253,694
Total	$619,768,222
CANADIAN	
Passenger Cars	$7,151,089
Trucks and Buses	46,971,165
Parts	10,473,789
Tires and Tubes	5,460,675
Total	$70,056,718
Grand Total Exports or American Manufacture	$689,824,940

American Passenger Car Exports—1940*

COUNTRIES	Not over $850		Over $850 but not over $1200		Over $1200 but not over $2000		Over $2000		Total 1940 New Passenger Cars		Total 1940 Second hand Passenger Cars	
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars
Europe	2,849	$ 1,420,451	315	$ 304,957	53	$ 78,285	14	$ 37,397	3,231	$ 1,841,090	25	$ 11,390
North America	23,812	15,012,749	4,634	4,390,486	935	1,338,037	81	211,859	29,462	20,953,131	1,894	560,498
South America	25,941	15,213,216	3,083	2,896,836	198	273,178	40	109,502	29,262	18,492,732	319	239,974
Asia	7,047	4,493,869	1,212	1,151,281	126	191,525	32	106,554	8,417	5,943,229	84	50,107
Oceania	5,284	2,112,445	51	43,729	3	4,643			5,338	2,160,817	27	14,405
Africa	11,737	6,500,289	1,272	1,202,169	75	106,368	12	53,912	13,096	7,862,738	10	7,752
Total	76,670	$44,753,019	10,567	$ 9,989,458	1,390	$1,992,036	179	$519,224	88,806	$57,253,737	2,359	$ 884,126
Alaska	231	160,038	183	182,121	36	50,173	1	2,905	451	395,237	80	36,559
Hawaii	4,108	2,823,140	721	686,383	36	52,257	4	11,018	4,869	3,572,798	352	221,590
Puerto Rico	2,823	1,930,052	542	505,538	33	47,567	10	25,084	3,408	2,508,241	64	39,862
Virgin Islands	49	33,242	3	2,956					52	36,198	4	2,200
Grand Total	83,881	$49,699,491	12,016	$11,366,456	1,495	$2,142,033	194	$558,231	97,586	$63,766,211	2,859	$1,184,337

*Motive Products Division, Bureau of Foreign and Domestic Commerce

American Truck Exports—1940*

COUNTRIES	Under 1 Ton		1 Ton and not over 1½ Tons		Over 1½ Tons and not over 2½ Tons		Over 2½ Tons		Bus Chassis		Total 1940 Trucks, Buses and Chassis	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Europe	893	$ 339,632	15,803	$ 8,753,498	6,078	$ 8,730,930	7,005	$21,853,626	78	$125,356	29,857	$39,803,042
North America	1,642	913,417	5,832	3,942,100	1,215	1,415,386	1,123	3,477,503	80	87,767	9,892	9,836,173
South America	3,004	1,389,676	17,768	10,536,896	1,536	1,537,677	471	1,136,459	63	86,403	22,842	14,687,111
Asia	1,363	628,570	16,593	7,442,621	1,090	1,088,096	514	2,282,918	29	27,620	19,589	11,469,825
Oceania	1,363	501,043	1,210	678,950	328	272,951	23	31,001	3	6,599	2,927	1,490,544
Africa	3,677	1,732,839	13,654	6,862,505	958	744,431	316	1,574,352	1	1,085	18,606	10,915,212
Total	11,942	$5,505,177	70,860	$38,216,570	11,205	$13,789,471	9,452	$30,355,859	254	$334,830	103,713	$88,201,907
Alaska	148	100,658	166	161,972	46	74,818	53	197,121			413	534,569
Hawaii	450	262,723	550	403,531	189	208,584	113	490,654	1	1,079	1,303	1,366,571
Puerto Rico	255	148,100	1,078	784,207	193	180,130	40	59,604	15	25,511	1,581	1,197,552
Virgin Islands	7	3,857	18	15,215	3	2,598	2	2,400			30	24,070
Grand Total	12,802	$6,020,515	72,672	$39,581,495	11,636	$14,255,601	9660	$31,105,638	270	$361,420	107,040	$91,324,669

* Motive Products Division, Bureau of Foreign and Domestic Commerce

American

	BUS MAKE AND MODEL	GENERAL: Passenger Rating	Type (City Service, Parlor, etc.)	Standard Wheelbase (In.)	Overall Length (In.)—Bumper to bumper	Inside Length (In.)—Passenger Compartment	Tread (In.)—Front and Rear	Complete Vehicle Weight—Dry (Lb.)	Standard Tire Size (In.)—Front and Rear	ENGINE: Make and Model	Cycle and Fuel	Location	Number of Cylinders—Bore and Stroke (In.)	Displacement (Cu. In.)	Rated Horsepower (S.A.E.)	Maximum Brake Hp. at Governed R.P.M.	Maximum Net Torque (Lb. Ft.) at Specified R.P.M.	Compression Ratio—to 1	Compression Pressure—(Lb.) at Specified R.P.M.	Valve Arrangement	Oiling System: Pressure to—
1	A. C. F. (4) 26S	26–28	CS	156½	289⅞	273	82–72	10420	9.00/18	HS 95	4-G	UFA	6-4x5	377	38.4	106–2600	268–1000	5.40	108–1000	I	acdef(1)
2	A. C. F. 29P	29–33	Par	220	358¼	327½	81¼–69¾	12900	9.00/18	HS 130	4-G	UFA	6-4¼x5	425	43.3	124–2400	296–1000	5.50	116–1000	I	acdef(1)
3	A. C. F. 31S	31	CS	172½	328⅝	313	81½–69¾	12500	9.00/18	HS 130	4-G	UFA	6-4¼x5	425	43.3	124–2400	296–1000	5.50	116–1000	I	acdef(1)
4	A. C. F. 36S	36	CS	188	366	342	81¼–70¼	13700	10.00/20	HS 135	4-G	UFA	6-4½x5	477	48.6	134–2400	340–1000	5.50	116–1000	I	acdef(1)
5	A. C. F. 37PB	37	Par	255½	396	378½	80⅛–72	18370	10.50/22	HS 180	4-G	UFA	6-5x6	707	60.0	194–2200	503–1400	5.40	116–1000	I	acdef(1)
6	A. C. F. 41S	41	CS	215½	396		79⅜–70⅝	15500	10.00/20	HS 162	4-G	UFA	6-4⅝x6	605	51.2	162–2200	428–1400	5.44	118–2200	I	acc e (1)
7	Aerocoach (5) PB20	20	Par	201⅜	336	261	75–65	7150	7.00/20	Ford 99B	4-G	R	8-3⅛x3¾	239	32.5	95–3600	170–2200	6.15		L	acd
8	Aerocoach EFI	22–25	Par	201⅜	336	261	75–65	8400	7.00/20	Ford 99B	4-G	R	8-3⅛x3¾	239	32.5	95–3600	170–2200	6.15		L	acd
9	Aerocoach EFT	25–29	CS	201⅜	336	261	75–65	8400	7.00/20	Ford 99B	4-G	R	8-3⅛x3¾	239	32.5	95–3600	170–2200	6.15		L	acd
10	Aerocoach P29	29–33	Par	192	358	352	78–71	12300	9.00/20	Int 401	4-G	R	6-4¼x5	401	40.8	114–2500	308– 800	5.70	94– 160	I	abcde
11	Aerocoach P33	33–37	Par	220	396	390	78–71	13000	9.00/20	Int 450A	4-G	R	6-4⅝x5	451	45.9	122–2400	332– 750	5.70	94– 160	I	abcde
12	Beck (6) Steeliner	24–29	C-P	190	322	262	75–66		7.50/20	Che	4-G	FI	6-3⅛x3⅛	235	30.4	93–3100	192– ††	6.50		I	acdf
13	Beck Mainliner	29	Par	185	364	289	78–69¾		**	Int..FBB401A	4-G	R	6-4⅛x5	401	40.8	114–2500	308– 800	5.20	92– 160	I	abcd
14	Beck Luxury Liner-220	33	Par	220	396	323	81¼–69¾		‡	Int...FBB450	4-G	R	6-4⅝x5	451	45.9	121–2400	335– 800	5.20	89– 160	I	abcd
15	Fixible-Clipper (7) 21CR41	21	Par	182	359½	248	76–70½	10200	7.50/20	Che 235	4-G	R	6-3⅛x3⅛	235	30.4	93–1500	192–1500	6.25		I	acdf
16	Fixible-Clipper 25CR41	25	Par	182	359½	248	76–70½	10500	7.50/20	Che 235	4-G	R	6-3⅛x3⅛	235	30.4	93–1500	192–1500	6.25		I	acdf
17	Fixible-Clipper 25BR41	25	Par	182	359½	248	76–70½	11700	8.25/20	Bui FB320	4-G	R	8-3⅛x4⅛	320	37.8	165–2200	278–2200	7.00		I	acdf
18	Fixible-Clipper 29BR41	29	Par	218	395½	284	76–70½	12220	8.25/20	Bui FB320	4-G	R	8-3⅛x4⅛	320	37.8	165–2200	278–2200	7.00		I	acdf
19	Ford (8) 19B	27	CS	148½	309	270¾	82⅛–83	9508	‡	Fo V8	4-G	R	8-3⅛x3¾	239	32.5	95–3000	169–1700	5.87		L	acd
20	Mack (9) L25	23–25	CS	165	304½	237	83–74½		7.00/20	Mack.EM330	4-G	R	6-4x4⅜	330	38.4	100–2800	244–1000	6.10		L	acdfg
21	Mack CY	25–27	CS	182	318	253	81½–74½		8.25/20	Mack..EN354	4-G	R	6-3⅞x5	354	36.0	116–2700	263–1000	5.80	130–1000	L	acdgh
22	Mack CW	23–25	CS	165	301	236	81½–74½		7.50/20	Mack..EN354	4-G	R	6-3⅞x5	354	36.0	116–2700	263–1000	5.80	130–1000	L	acdgh
23	Mack LC	31–37	CS	188	353½	300	82¼–73½		9.00/20	Mack..EN457	4-G	R	6-4¼x5⅝	457	43.3	136–2400	348–1200	6.05	113–1000	I	acdefgh
24	Mack LD	35–37	CS	218	383½	330	82¼–73½		9.00/20	Mack..EN524	4-G	R	6-4½x5½	524	48.6	134–2400	387– 800	5.50	117–1000	L	acdgh
25	Mack CD	36–37	CS	212	382	339	82–72⅜		9.75/20	Mack EO	4-G	R	6-4⅜x5¾	519	45.9	150–2200	402–1300	6.10	124–1000	I	acdefgh
26	Mack CM	40–41	CS	232	396	353	82–72⅜		9.75/20	Mack EP	4-G	R	6-4⅜x5¾	611	54.1	179–2100	509–1000	6.15	124–1000	I	acdefgh
27	Mack CO	36–37	CS	212	382	339	82–72⅜		10.50/20	Mack ED	4-D	R	6-4⅜x5¾	519	45.9	131–2000	381–1200	14.5	480–1000	I	acdefgh
28	Mack CM	40–41	CS	232	396	353	82–72⅜		10.50/20	Mack ED	4-D	R	6-4⅜x5¾	519	45.9	131–2000	381–1200	14.5	480–1000	I	acdefgh
29	Reo (10) 394-T-TD	27–29	CS	150	302		81⅝–72¼	9060	7.50/18	Reo 310	4-G	R	6-3⅝x5	310	31.5	97–2800	226–1000	5.80	125–1000	L	abcdg
30	Reo 384P	29	Par	150	291		81⅝–72¼	10500	8.25/18	Reo 310	4-G	R	6-3⅝x5	310	31.5	97–2800	226–1000	5.80	125–1000	L	abcdg
31	Reo 385P	33	Par	186	327		81⅝–72¼	11550	8.25/18	Reo 361	4-G	R	6-4¼x4½	361	40.8	106–2800	255–1000	6.00	125–1000	L	abcd
32	Reo 395-T-TD	31–33	CS	186	338		81⅝–72¼	9600	8.25/18	Reo 361	4-G	R	6-4¼x4½	361	40.8	106–2800	255–1000	6.00	125–1000	L	abcd
33	Twin Coach (11) ■23R-23G	23	CS	179	282¼		82¼–73⅛	9500▲	8.25/18	Her TC-320	4-G	R	6-4x4¼	320	38.4	91–2400	243– 800	5.90	135–1000	L	abcdg
34	Twin Coach 27GS	27	CS	210	312		82½–73⅛	10550	8.25/20	Her TC-320	4-G	R	6-4x4¼	320	38.4	91–2400	243– 800	5.90	135–1000	L	abcdg
35	Twin Coach ■27R-27G	27	CS	210	312		82½–73⅛	10400▲	8.25/20	Her TC-383	4-G	R	6-4¼x4½	383	43.3	111–2400	288–1100	6.00	135–1000	L	abcdg
36	Twin Coach 30GS	30	CS	235½	338		82½–73⅛	11450	‡‡	Her TC-383	4-G	R	6-4¼x4½	383	43.3	111–2400	288–1100	6.00	135–1000	L	abcdg
37	Twin Coach ■30R-30G	30	CS	235¼	338		82½–73⅛	11350▲	‡‡	Her TC-404	4-G	R	6-4¼x4¾	404	43.3	118–2400	307–1100	6.12	135–1000	L	abcdg
38	Twin Coach ■31RL-31G	31	CS	179	335		82¾–72¾	12500▲	8.25/20	Her TC-404	4-G	R	6-4¼x4¾	404	43.3	118–2400	307–1100	6.12	135–1000	L	abcdg
39	Twin Coach ■35RL-35G	35	CS	207	367		82¾–72¾	14850▲	10.00/20	Her TC-558	4-G	R	6-4¾x5¼	558	54.2	145–2400	407–1000	6.00	140–1000	L	abcdg
40	Twin Coach ■35RLD2-35GDE	35	CS	207	367		82¾–72¾	17300▲	10.00/20	Her.TC-529D	4-D	R	6-4⅝x5¼	529	51.3	140–2000	397–1200	14.5		I	abcdg
41	Twin Coach ■41RL-41G	41	CS	239	395		82¾–72¾	15550▲	10.00/20	Her TC-558	4-G	R	6-4¾x5¼	558	54.2	145–2400	407–1000	6.00	140–1000	L	abcdg
42	Twin Coach ■41RLDE-41GDE	41	CS	239	395		82¾–72¾	17930▲	10.00/20	Her.TC-529D	4-D	R	6-4⅝x5¼	529	51.3	140–2000	397–1200	14.5		I	abcdg
43	White (12) 782	31	CS	168	336		82⅝–70¾	12°65	9.00/20	Whi 140TA	4-G	UFA	6-3⅞x5⅛	362	36.0	125–2800	285–1200	6.28		L	abcdegh
44	White 782-1	33	CS-S	168	336		82⅝–70¾	13000	9.00/20	Whi 140TA	4-G	UFA	6-3⅞x5⅛	362	36.0	125–2800	285–1200	6.28		L	abcdegh
45	White 7786	33	Par-S	214	395		82⅛–71¾	16500	10.00/20	Whi 681	4-G	UFA	12-4⅛x4¼	681	81.7	209–2600	500–1200	6.10		L	abcdegh
46	White 786	36	CS-S	191	372		82⅛–71¾	14875	10.00/20	Whi 681	4-G	UFA	12-4⅛x4¼	681	81.7	209–2600	500–1200	6.10		L	abcdegh
47	White 786-1	37	S	214	395		82⅛–71¾	15500	10.00/20	Whi 681	4-G	UFA	12-4⅛x4¼	681	81.7	209–2600	500–1200	6.10		L	abcdegh
48	White 7788	37	Par-S	214	395		82⅛–71¾	17500	10.00/20	Whi 681	4-G	UFA	12-4⅛x4¼	681	81.7	209–2600	500–1200	6.10		L	abcdegh
49	White 788	40	CS-S	214	395		82⅛–71¾	15775	11.00/20	Whi 681	4-G	UFA	12-4⅛x4¼	681	81.7	209–2600	500–1200	6.10		L	abcdegh
50	White 788-1	41	S	214	395		82⅛–71¾	15775	11.00/20	Whi 681	4-G	UFA	12-4⅛x4¼	681	81.7	209–2600	500–1200	6.10		L	abcdegh
51	White 7798	41	Par-S	214	395		82⅛–71¾	18250	11.00/20	Whi 681	4-G	UFA	12-4⅛x4¼	681	81.7	209–2600	500–1200	6.10		L	abcdegh
52	White 798	45	CS-S	238	419		82⅛–71¾	16785	11.00/20	Whi 681	4-G	UFA	12-4⅛x4¼	681	81.7	209–2600	500–1200	6.10		L	abcdegh
53	White 798-1	45	S	214	295		82⅛–71¾	17500	11.00/20	Whi 681	4-G	UFA	12-4⅛x4¼	681	81.7	209–2600	500–1200	6.10		L	abcdegh
54	Yellow Coach (13) TG-2101	21	CS	160	282½	250½	69⅛–65	6290	7.50/18	Che 217	4-G	FH	6-3½x3¾	217	29.4	78–3000	168–1100	6.25	120– 130	I	acdf
55	Yellow Coach TG-2401	24	CS	146	282½	252½	72– 65	7050	7.00/20	Che 217	4-G	R	6-3½x3¾	217	29.4	78–3000	168–1100	6.25	120– 130	I	acdf
56	Yellow Coach PG-2505	25	Par	191	361⅞	268	78⅜–70½	10200	7.50/20	GMC 308	4-G	R	6-3⅞x4½	308	34.9	110–2800	244–1000	6.00	118– 117	I	abcdf
57	Yellow Coach TG-2701	27	CS	145	296	252½	82⅞–77	8710	7.50/20	GMC 248	4-G	R	6-3⅜x3½	248	38.1	88–3000	196–1000	6.15	130– 130	I	abcdf
58	Yellow Coach TD-2701	27	CS	145	297⅝	252½	82⅞–77	10000	7.50/20	GM(2) 3-71	2-D	R	3-4¼x5	213	21.7	83–2000	265–1000	16.0	400– 350	I†	abcdf
59	Yellow Coach PG-2902	29	Par	218	394⅛	295	80– 73	11750	9.00/18	GMC 426	4-G	R	6-4¼x5	426	43.3	145–2600	340–1000	6.00	102– 117	I	abcdf
60	Yellow Coach PD-2902	29	Par	218	396	296	80– 73	12850	9.00/18	GM(2) 4-71	2-D	R	4-4¼x5	284	28.9	110–2000	350–1000	16.0	400– 350	I†	abcdf
61	Yellow Coach TG-3201	32	CS	181½	338	310	81⅝–71½	12210	9.00/20	GMC 426	4-G	R	6-4¼x5	426	43.3	145–2600	340–1000	6.00	102– 117	I	abcdf
62	Yellow Coach TD-3201	32	CS	181½	338	310	81⅝–71½	12830	9.00/20	GM(2) 4-71	2-D	R	4-4¼x5	284	28.9	110–2000	350–1000	16.0	400– 350	I†	abcdf
63	Yellow Coach TG-3602	36	CS	210½	367	339	81⅝–72½	12700	9.00/20	GMC 451	4-G	R	6-4⅝x5	451	45.9	149–2600	368–1000	6.00	101– 117	I	abcdf
64	Yellow Coach TG-3601	36	CS	210½	367	339	81⅝–72½	13510	9.00/20	GMC 529	4-G	R	6-4⅝x5¼	529	51.3	158–2500	405–1000	5.50	90– 120	I	abcdf
65	Yellow Coach TD-3602	36	CS	210½	367	339	81⅝–72½	13320	9.00/20	GM(2) 4-71	2-D	R	4-4¼x5	284	28.9	110–2000	350–1000	16.0	400– 350	I†	abcdf
66	Yellow Coach TD-3601	36	CS	210½	367	339	81⅝–72½	14030	9.00/20	GM(2) 6-71	2-D	R	6-4¼x5	426	43.3	165–2000	525–1000	16.0	400– 350	I†	abcdf
67	Yellow Coach PG-3701	37	Par	231¾	396	365	78¾–71¾	18050	10.50/20	GMC 707	4-G	R	6-5x6	707	60.0	175–2200	560– 800	5.15	90– 120	I	abcdf
68	Yellow Coach PD-3701	37	Par	231¾	396	365	78¾–71¾	18309	10.50/20	GM(2) 6-71	2-D	R	6-4¼x5	426	43.3	165–2000	525–1000	16.0	400– 350	I	abcdf
69	Yellow Coach TG-4001	40	CS	239¼	396	368	81 1/16–72½	14240	10.00/20	GMC 529	4-G	R	6-4⅝x5¼	529	51.3	158–2500	405–1000	5.50	90– 120	I	abcdf
70	Yellow Coach TD-4001	40	CS	239¼	396	368	81 1/16–72½	14630	10.00/20	GM(2)	2-D	R	6-4¼x5	426	43.3	165–2000	525–1000	16.0	400– 350	I†	abcdf
71	Yellow Coach (3) TG-4502	45	CS	239½	420	392	81 1/16–72½	15000	10.00/20	GMC 529	4-G	R	6-4⅝x5¼	529	51.3	158–2500	405–1000	5.50	90– 120	I	abcdf
72	Yellow Coach (3) TD-4502	45	CS	239½	420	392	81 1/16–72½	15380	10.00/20	GM(2) 6-71	2-D	R	6-4¼x5	426	43.3	165–2000	525–1000	16.0	400– 350	I†	abcdf

ABBREVIATIONS FOR BUSES

†—Exhaust valves only, Intake ports in cylinder walls
°—Others available
*—11 leaves for Right side; 13 leaves for Left side
■—G models same as R models except Gravity Torsion Rod Springs used
•—16½ on rear
▲—Weight for R models
‡—9.00/18 Front; 7.50/20 Rear
††—1000-2000 R.P.M.
**—8.25 or 9.00/20
‡—9.00 or 10.00/20
‡‡—9.00/18 Front; 8.25/20 Rear
(1)—Oil pressure also to clutch pilot bearing, governor and air compressor
(2)—General Motors Diesel
(3)—Hydraulic transmission, speeds variable and direct
(4)—A.C.F. American Car & Foundry (J. G. Brill Co.)
(5)—Aerocoach. General American Aerocoach Cc.
(6)—Beck. C. D. Beck & Co.
(7)—Flxible Clipper. The Flxible Co.
(8)—Ford. Ford Motor Co.
(9)—Mack. Mack Manufacturing Corp.
(10)—Reo. Reo Motors, Inc.
(11)—Twin Coach. Twin Coach Co.
(12)—White. The White Motor Co.
(13)—Yellow Coach. Yellow Truck & Coach Mfg. Co.
a—Main Bearings
A—Air Pressure (Brakes)
Au—Automatic clutch
b—Wrist Pins
Bd—Budd Wheel Co.
BL—Brown-Lipe (Spicer Mfg. Corp.)
Bos—American Bosch Corp.
Bui—Buick Motor Co.
c—Connecting Rods
Car—Carter Carburetor Co.
Ce—Centrifugal
Che—Chevrolet Motor Div.
Cla—Clark Equipment Co.
C-P—City service or Parlor
CS—City service
CS-S—City service and Suburban
d—Camshaft Bearings
D—Diesel or heavy oil

Bus Chassis

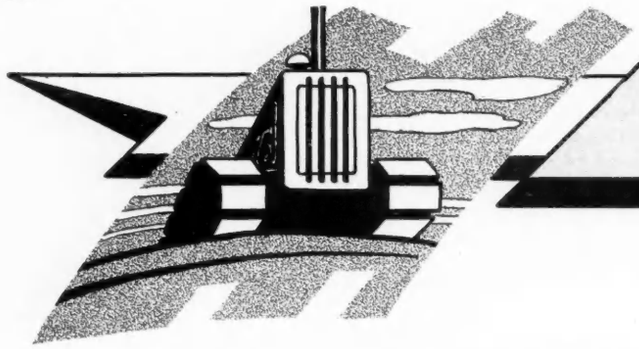
FUEL SYSTEM			ELECTRICAL SYSTEM			Gov-ernor			TRANSMISSION				Uni-versals		REAR AXLE			BRAKES				SPRINGS					RUNNING GEAR			
Carburetor or Injector Pump					Battery													Service			Hand	Front		Rear						
Make and Type	Size (In.)	Tank Capacity (Gal.)	Ignition System—Make	Generator and Starter—Make	Voltage and Amp. Hours Capacity	Type	Max. Governed Speed—M.P.H.	Clutch—Make and Size (In. diam.)	Make	No. or Forward Speeds	Low Speed Ratio—to 1	Type	Number	Size of Series	Make and Model	Standard Gear Ratio—to 1	Type of Application	Total Lining Area (Sq. In.)	Drum Diameter	Operates on—	Total Lining Area (Sq. In.)	No. of Leaves	Length and Width (In.)	No. of Leaves	Length and Width (In.)	Front Axle—Make	Steering Gear—Make	Outside Diameter of Min. Turn. Circle (Ft.)	Line Number
Zen..Up	1½	60	DR	DR	12–138	Ce	52	Spi...13	BL	3	4.01	M	2	1500	Tim....54429	5.43	A	460	14½	Ds	38½	12	56 –3	13	58½–3	Tim	Ro	58	1
Zen..Up	1¾	77	DR	DR	12–138	Ce	58	Spi...13	BL	4	4.57	M	2	1500	Tim....56515	4.44	A	575	14½	Ds	76	10	56 –3½	13	60 –3½	Tim	Ro	74	2
Zen..Up	1¾	72	DR	DR	12–158	Ce	49	Spi...14	BL	3	3.80	M	2	1500	Tim....56515	5.29	A	575	14½	Ds	88	12	56 –3	16	60 –3½	Tim	Ro	82	3
Zen..Up	1¾	72	DR	DR	12–158	Ce	49	Spi...14	BL	3	3.80	M	2	1600	Tim....58282	5.57	A	692	16½	Ds	88	11	59 –3¼	13	60 –4	Tim	Ro	68	4
Zen..Up	2	120	DR	DR	12–158	Ce	60	Lg...15½	BL	4	4.36	M	2	1700	Tim....59023	4.62	A	867	17¼	Ds	121	12	58 –4	12	67 –5	Tim	Ro	80	5
Zen..Up	2	100	DR	DR	12–158	Ce	45	Lg...15½	BL	3	3.80	M	2	1600	Tim....58283	5.57	A	692	16½	Ds	88	12	62 –3½	12	64 –5	Tim	Ro	74	6
Fo..Do	1¼	50	Fo	LN	12–150	Su	70	L-F...11	BL	3	3.55	M	2	1300	Tim....53000	5.14	H	237	16	RW	....	10	48 –3	10	62 –3	Tim	Ro	74	7
Fo..Do	1¼	50	Fo	LN	12–150	Su	70	L-F...11	BL	3	3.55	M	2	1300	Tim....53526	5.14	A	237	16	RW	....	10	48 –3	10	62 –3	Tim	Ro	74	8
Fo..Do	1¼	50	Fo	LN	12–150	Su	70	L-F...11	BL	3	3.55	M	2	1300	Tim....53526	5.14	A	237	16	RW	....	10	48 –3	10	62 –3	Tim	Ro	74	9
Zen..Do	1¼	100	DR	DR	12–158	Ce	72	Lg...14	Cla	5	4.64	M	2	1500	Tim....58428	5.14	A	452	16¼*	Ds	95	10	51¼–3	*	65 –3	Tim	Ro	62	10
Zen..Do	1½	100	DR	DR	12–158	Ce	70	Lg...14	Cla	5	4.46	M	2	1500	Tim....58428	5.14	A	452	16¼*	Ds	95	10	51¼–3	*	65 –3	Tim	Ro	70	11
Car..Do	1¼	40	DR	DR	6– 94	....	....	Che..10¾	Che	4	7.20	M	4	....	Che....	5.42	H	....	....	RW	....	46 –2½	....	52 –2½	Tim	Ro	....	12
Zen..Do	1¼	63	DR	DR	12–140	Su	70	Roc.....	Fu	5	6.52	M	2	1500	Tim...56410PA	5.28	A	595	16	Ds	35	13	52 –3	17	58 –3	Tim	Ro	....	13
Zen..Do	1½	63	DR	DR	12–140	Su	70	Roc.....	Fu	5	6.52	M	2	1500	Tim...56410PA	5.28	A	625	16	Ds	35	13	52 –3	17	58 –3	Tim	Ro	....	14
Car..Do	1¼	40	DR	DR	12–120	Su	60	Che...11	Cla	4	6.35	M	2	1400	Tim 53542TWX	5.67	A	....	16	Ds	84	....	52 –2½	....	54 –2½	Tim	Ro	....	15
Car..Do	1¼	40	DR	DR	12–120	Su	60	Che...11	Cla	4	6.35	M	2	1400	Tim 53542TWX	5.67	A	....	16	Ds	84	....	52 –2½	....	54 –2½	Tim	Ro	....	16
Str..Do	1	40	DR	DR	12–140	Ce	65	Spi...13	BL	4	4.57	M	2	1500	Tim. 56410PAX	4.44	A	522	16⅜*	Ds	84	....	52 *–3	....	54 –3	Tim	Ro	....	17
Str..Do	1	40	DR	DR	12–140	Ce	65	Spi...13	BL	4	4.57	M	2	1500	Tim. 56410PAX	5.29	A	522	16⅜*	Ds	84	....	52 –3	....	54 –3	Tim	Ro	....	18
Fo..Do	1¼	60	Fo	Fo	12–158	Su	50	L-F...11	BL	3	3.81	M	2	....	Tim.....	5.83	A	472	14½	Ds	55½	10	54 –3	14	58 –3	Spi	F-G	61	19
Str..Up	1½	40	DR	DR	12–118	Su	48	Own.12⅞	Own	3	4.16	M	2	1400	Own....RA41	4.87°	H	372	16	Ds	94	10	60 –3	10	60 –3	Own	Own	60	20
Str..Up	1¾	55	DR	DR	12–158	Ce	55	Own.13⅛	Own	3	4.16	M	2	1500	Own....RA60	4.08°	A	456	16¼	Ds	94	11	60 –3	11	60 –3	Own	Own	67	21
Str..Up	1¾	55	DR	DR	12–158	Ce	55	Own.13⅛	Own	3	4.16	M	2	1500	Own....RA60	4.08°	A	456	16¼	Ds	94	11	60 –3	11	60 –3	Own	Own	60	22
Str..Up	1¾	70	DR	DR	12–158	Ce	62	Own...15	Own	3	3.79	M	2	1600	Own....RA68	4.44°	A	646	16½	Ds	94	11	60 –3½	17	60 –4	Own	Own	67	23
Str..Up	1¾	70	DR	DR	12–158	Ce	62	Own...15	Own	3	3.79	M	2	1600	Own....RA68	4.44°	A	646	16½	Ds	93	11	60 –3½	17	60 –4	Own	Own	75	24
Str..Up	1¾	80	DR	DR	12–198	Ce	60	Own...15	Own	3	4.75	M	2	1600	Own....RA42	3.08°	A	816	16½	Ds	90	10	60 –4	16	60 –4	Own	Own	70	25
Str..Up	1¾	80	DR	DR	12–198	Ce	57	Own...15	Own	3	4.75	M	2	1700	Own....RA42	3.08°	A	816	16½	Ds	90	11	60 –4	17	60 –4	Own	Own	79	26
Bos..Mu	....	80	N	DR	12–24352	Ce	49	.....	GW	...	.....	E	2	1700	Own....RA66	6.64	A	816	16½	Ds	90	10	60 –4	16	60 –4	Own	Own	76	27
Bos..Mu	....	80	N	DR	12–24352	Ce	....	.....	GW	...	.....	E	2	1700	Own....RA66	6.64	A	816	16½	Ds	90	11	60 –4	17	60 –4	Own	Own	85	28
Zen..Do	1½	43	DR	DR	12–152	Su	48	Lg...14	Own	3	3.38	M	2	6C	Tim.....	5.14	A	470	14½	Ds	88½	10	58 –3½	11	58 –3½	Tim	Ro	57½	29
Zen..Up	1½	75	DR	DR	12–152	Su	55	Lg...14	Own	3	3.38	M	2	6C	Tim.....	4.57	A	470	14½	Ds	88½	10	58 –3½	11	58 –3½	Tim	Ro	57½	30
Zen..Up	1½	75	DR	DR	12–152	Su	53	Lg...14	Own	3	3.38	M	2	6C	Tim.....	4.57	A	470	14½	Ds	88½	10	58 –3½	11	58 –3½	Tim	Ro	69	31
Zen..Up	1½	43	DR	DR	12–152	Su	47	Lg...14	Own	3	3.38	M	2	6C	Tim.....	5.14	A	470	14½	Ds	88½	10	58 –3½	11	58 –3½	Tim	Ro	69	32
Zen..Up	1¼	65	DR	DR	12–117	Su	43	Spi...13	BL	3	4.11°	M	2	1200	Tim....53537	5.14	A	472	14½	Ds	31½	11■	46 –3	14■	60 –3	Tim	Ro	62	33
Zen..Up	1¼	65	DR	DR	12–134	Su	43	Spi...13	BL	3	4.11°	M	2	1200	Tim....53537	5.14	A	472	14¼	Ds	31½	13	46 –3	14	60 –3	Tim	Ro	71	34
Zen..Up	1½	65	DR	DR	12–134	Su	44	Spi...13	BL	3	4.11°	M	2	1200	Tim....54419	5.28	A	472	14¼	Ds	31½	13■	46 –3	14■	60 –3	Tim	Ro	71	35
Zen..Up	1½	65	DR	DR	12–134	Su	44	Spi...13	BL	3	4.11°	M	2	1200	Tim....54419	5.28	A	472	14¼	Ds	31½	13	46 –3	15	60 –3	Tim	Ro	79	36
Zen..Up	1¾	65	DR	DR	12–134	Su	44	Spi...13	BL	3	4.11°	M	2	1200	Tim....56219	5.28	A	576	16½	Ds	31½	13■	46 –3	15■	60 –3	Tim	Ro	79	37
Zen..Up	1¾	65	DR	DR	12–134	Su	44	Spi...13	BL	3	4.11°	M	2	1200	Tim....56218	5.28	A	576	16½	Ds	31½	10■	60 –4	12■	60 –4	Tim	Ro	63	38
Zen..Up	2	90	DR	DR	12–134	Su	51	Spi...14	BL	3	3.97°	M	2	1600	Tim....58267	5.12	A	720	16½	Ds	61	13■	60 –4	14■	66 –4	Tim	Ro	71½	39
Bos.....	....	90	N	DR	12–134	....	....	.....	....	...	.....	....	2	1600	Tim....58268	6.17	A	720	16½	Ds	61	13■	60 –4	15■	66 –4	Tim	Ro	71½	40
Zen..Up	2	90	DR	DR	12–134	Su	51	Spi...14	BL	3	3.97°	M	2	1600	Tim....58267	5.12	A	720	16½	Ds	61	13■	60 –4	16■	66 –4	Tim	Ro	80½	41
Bos.....	....	90	N	DR	12–134	....	....	.....	....	...	.....	....	2	1600	Tim....58268	6.17	A	720	16½	Ds	61	14■	60 –4	17■	66 –4	Tim	Ro	80½	42
Str..Do	1¼	65	DR	DR	12–158	Ce	....	WL...14	Own	3	3.81	M	2	1500	Own....102C	5.71	A	691	15	Ds	47½	10	58 –3½	10	64 –4	Own	Ro	64½	43
Str..Do	1¼	65	DR	DR	12–158	Ce	....	WL...14	Own	3	3.81	M	2	1500	Own....102C	5.71	A	691	15	Ds	47½	10	58 –3½	10	64 –4	Own	Ro	64½	44
Zen..Ho	1⅝	105	DR	DR	12–158	Ce	....	Lg...14	Own	3	3.32	M	2	1700	Own.....34C	5.22	A	818	15	Ds	123	11	58⅜–3½	14	64 –4	Own	Ro	64⅔	45
Zen..Ho	1⅝	105	DR	DR	12–158	Ce	....	Lg...14	Own	3	3.32	M	2	1700	Own.....34C	5.22	A	818	15	Ds	123	10	58⅜–3½	13	64 –4	Own	Ro	58	46
Zen..Ho	1⅝	105	DR	DR	12–158	Ce	....	Lg...14	Own	3	3.32	M	2	1700	Own.....34C	5.22	A	818	15	Ds	123	11	58⅜–3½	14	64 –4	Own	Ro	64⅔	47
Zen..Ho	1⅝	135	DR	DR	12–158	Ce	....	Lg...14	Own	3	3.32	M	2	1700	Own.....34C	5.22	A	818	15	Ds	123	11	58⅜–3½	14	64 –4	Own	Ro	64⅔	48
Zen..Ho	1⅝	105	DR	DR	12–158	Ce	....	Lg...14	Own	3	3.32	M	2	1700	Own.....34C	5.22	A	818	15	Ds	123	11	58⅜–3½	14	64 –4	Own	Ro	64⅔	49
Zen..Ho	1⅝	105	DR	DR	12–158	Ce	....	Lg...14	Own	3	3.32	M	2	1700	Own.....34C	5.22	A	818	15	Ds	123	11	58⅜–3½	14	64 –4	Own	Ro	64⅔	50
Zen..Ho	1⅝	135	DR	DR	12–158	Ce	....	Lg...14	Own	3	3.32	M	2	1700	Own.....34C	5.22	A	818	15	Ds	123	11	58⅜–3½	14	64 –4	Own	Ro	64⅔	51
Zen..Ho	1⅝	105	DR	DR	12–158	Ce	....	Lg...14	Own	3	3.32	M	2	1700	Own.....34C	5.22	A	818	15	Ds	123	12	58⅜–3½	14	64 –4	Own	Ro	64⅔	52
Zen..Ho	1⅝	105	DR	DR	12–158	Ce	....	Lg...14	Own	3	3.32	M	2	1700	Own.....34C	5.22	A	818	15	Ds	123	11	58⅜–3½	14	64 –4	Own	Ro	64⅔	53
◄						◄																								
Car..Do	1⅝	35	DR	DR	12– 95	Su	47	In.....11	Che	4	7.23	M	3	1350	Tim....53000	6.20	H	436	16	RW	218	10	44 –2½	10	54 –2½	Tim	Sag	61⅝	54
Zen..Do	1⅝	35	DR	DR	12– 95	Su	46	In.....11	Cla	3	3.90	M	2	1400	Tim....54000	6.58	H	442	16¼	RW	221	12	48 –2½	11	54½–2½	Cla	Sag	61⅝	55
Zen..Do	1⅝	60	DR	DR	12– 95	Ce	58	Lg.....14	Cla	4	5.00	M	2	1500	Tim....53000	4.57	A	496	14½	Ds	88½	9	50 –3	10	58 –3	Tim	Sag	69⅔	56
Zen..Do	1⅝	50	DR	DR	12– 95	Su	47	In.....11	Cla	3	3.90	M	2	1400	Tim....53000	6.59	A	496	14½	Ds	88½	14	48 –2½	12	54½–3	Tim	Sag	59⅓	57
GM(2)..	....	50	N	DR	12–126	Ce	42	Lg.....14	Cla	4	4.88	M	2	1500	Tim....53000	4.89	A	496	14½	Ds	88½	14	48 –2½	14	52½–3	Tim	Sag	55⅔	58
Zen..Do	1¾	110	DR	DR	12–113	Ce	65	Lg.....14	Cla	4	4.88	M	2	1500	Tim....55000	4.11	A	620	14½	Ds	88½	10	49¾–3	13	58 –3	Tim	Sag	75⅔	59
GM(2)..	....	60	N	DR	12–126	Ce	53	Lg...15½	Cla	4	4.34	M	2	1500	Tim....55000	4.11	A	620	14½	Ds	88½	11	49¾–3	15	58 –3	Tim	Sag	75⅔	60
Zen..Do	1¾	85	DR	DR	12–126	Su	51	Lg.....14	BL	3	3.50	M	2	1600	Tim....55000	5.45	A	587	14½	Ds	69	9	58 –3½	11	62 –3½	Tim	Sag	66⅔	61
GM(2)..	....	85	N	DR	12–126	Ce	45	Lg...15½	BL	3	3.50	M	2	1600	Tim....55000	4.99	A	587	14½	Ds	69	9	58 –3½	11	62½–3½	Tim	Sag	66⅔	62
Zen..Do	1¾	85	DR	DR	12–126	Ce	47	Lg.....14	BL	3	3.50	M	2	1600	Tim....57000	5.45	A	586	14½	Ds	69	10	58 –3½	11	62 –3½	Tim	Sag	74	63
Zen..Do	2	85	DR	DR	12–126	Ce	56	Lg...15½	BL	3	3.32	M	2	1700	Tim....58000	5.06	A	646	14½	Ds	104	10	58 –3½	12	62 –3½	Tim	Sag	74	64
GM(2)..	....	85	N	DR	12–126	Ce	45	Lg...15½	BL	3	3.50	M	2	1600	Tim....57000	4.99	A	587	14½	Ds	69	10	58 –3½	12	62 –3½	Tim	Sag	74	65
GM(2)..	....	85	N	DR	12–126	Ce	53	Lg.....17	BL	3	3.32	M	2	1700	Tim....58000	4.23	A	646	14½	Ds	104	10	58 –3½	12	62 –3½	Tim	Sag	74	66
Str..Do	2	150	DR	DR	12–126	Ce	70	Lg.....17	BL	4	4.36	M	2	1700	Tim....59000	3.58	A	822	14½	Ds	126	12	60 –4	12	74 –4	Tim	Sag	78⅜	67
GM(2)..	....	95	N	DR	12–126	Ce	59	Lg.....17	BL	4	4.36	M	2	1700	Tim....59000	3.58	A	822	14½	Ds	126	12	60 –4	12	74 –4	Tim	Sag	78½	68
Zen..Do	2	85	DR	DR	12– 95	Ce	57	Lg...15½	BL	3	3.32	M	2	1700	Tim....58000	5.06	A	705	14½	Ds	104	11	58 –3½	12	62 –4	Tim	Sag	83	69
GM(2)..	....	85	N	DR	12–126	Ce	54	Lg.....17	BL	3	3.32	M	2	1700	Tim....58000	4.23	A	705	14½	Ds	104	11	58 –3½	12	62 –4	Tim	Sag	83	70
Zen..Do	2	85	DR	DR	12– 95	Ce	59	Au.....16	BL	...	.....	H	2	1700	Tim....58000	5.05	A	705	14½	Ds	104	11	58 –3½	14	62 –4	Tim	Sag	80	71
GM(2)..	....	85	N	DR	12–126	Ce	54	Au.....16	BL	...	.....	H	2	1700	Tim....58000	4.43	A	705	14½	Ds	104	11	58 –3½	12	62 –4	Tim	Sag	80	72

Dn—Dayton Steel Foundry Co.
Do—Downdraft
DR—Delco-Remy Div.
Ds—Drive Shaft
e—Accessory Drive
E—Electric
f—Valve lifters or Rocker Arms and Shafts
F-G—Ford-Gemmer
FH—Front end, under hood
FI—Front Inside
Fo—Ford Motor Co.
Fu—Fuller Mfg. Co.
g—Timing Gears

G—Gasoline
G.M.C.—General Motors Truck & Coach Mfg. Co.
GW—General Electric or Westinghouse generator and propulsion motor
h—Air Compressor
H—Hydraulic
Her—Hercules Motor Corp.
Ho—Horizontal
HS—Hall-Scott Motor Car Co.
I—In-Head (Valves)
In—Inland Mfg. Div.
Int—International Harvester Co.

L—At Side (Valves)
L-F—Long-Ford
Lg—Long Mfg. Div.
LN—Leece-Neville Co.
M—Mechanical
Mu—Multiple Unit
MW—Motor Wheel Corp.
N—No or None
Par—Parlor Coach
R—Rear (Engine Location)
Ro—Ross Gear & Tool Co.
Roc—Rockford Drilling Machine Div.

RW—Rear Wheels
S—Suburban Coach
Sag—Saginaw Steering Gear Div.
Spi—Spicer Mfg. Corp.
Str—Stromberg Carburetor Div.
Su—Suction
Tim—Timken Detroit Axle Co.
UFA—Under Floor, Amidship
Up—Updraft
Whi—White Motor Co.
WL—W. C. Lipe, Inc.
Zen—Zenith Carburetor Co.



AMERICAN

CURRENT MODELS OF

Line Number	TRACTOR MAKE AND MODEL	GENERAL: Minimum Turning Radius Outside (Ft.) /Minimum Tread	GENERAL: Ground Clearance (In.)	GENERAL: Shipping Weight (Lb.) Standard Shoe /Minimum Tread	GENERAL: Tread Minimum (In.)	GENERAL: Tread Maximum (In.)	DRAWBAR: Lateral Adjustment At Pin (In.)	DRAWBAR: Height Above Ground (In.)	OVERALL DIMENSIONS: Length (In.)	OVERALL DIMENSIONS: Width—Maximum (In.) (Minimum Tread)	OVERALL DIMENSIONS: Height to Highest Point (In.)	TRACK: Width of Shoe Standard (In.)	TRACK: Length on Ground (In.)	HP. RATING: Belt	HP. RATING: Drawbar	Power Take-off	No. of Forward Speeds	No. of Reverse Speeds	MAXIMUM DRAWBAR PULL AT NORMAL GOVERNED ENGINE R.P.M.: First Gear (Lb.)	Second Gear (Lb.)	Third Gear (Lb.)	Fourth Gear (Lb.)	Fifth Gear (Lb.)	Sixth Gear (Lb.)	Travel Speeds at Normal Governed Engine R.P.M.: First Gear (M.P.H.)	Second Gear (M.P.H.)	Third Gear (M.P.H.)	Fourth Gear (M.P.H.)
1	Allis-Chalmers M	6 *	11	6530	40	50	23	9 5/16	101 3/8	57 1/4	78 13/16	12	56 7/16	39.54	32.77	Op	4	1	5899	5465	3436	2428			1.83	2.23	3.20	4.15
2	Allis-Chalmers K	7	11	10990	48	63	22	11 1/16	124	65 7/8	79	15	67	63.96	55.00	Op	4	1	11785	7727	6165	2815			1.72	2.59	3.26	5.92
3	Allis-Chalmers S	8 1/4	15 1/2	18680	62	74	32	14 1/16	146	84 3/8	97	18	77 1/2	85.77	70.44	Op	5	1	17843	11367	7900	5.52	3245		1.52	2.32	3.25	4.55
4	Allis-Chalmers L	9	16 3/4	22470	68	68	35	15 5/16	153 1/4	93	95	20	85 1/16	110.15	91.53	Op	6	2	23851	18410	12919	9770	6448	4520	1.48	1.94	2.68	3.50
5	Allis-Chalmers HD14	9 1/2	13 1/2	27800	68	68	30	15 5/16	165	91 3/4	101 5/16	22	85 1/16	150.48	132.19	St	6	2							1.72	2.18	2.76	3.50
6	Allis-Chalmers HD10	8 2/3	11 5/8	19900	62	74	32	14 5/16	162	82 1/4	98	18	77 1/2	101.62	86.63	Op	6	2							1.69	2.06	2.68	3.78
7	Allis-Chalmers HD7	7 1/6	10 3/8	12500	52	63	19 1/2	10 3/4	128	70	85 1/4	16	67	71.08	60.10	Op	4	1							1.84	2.55	3.45	5.82
8	Caterpillar R2	5 3/4	9	6470°	40	50	20 3/8	12	110	55 3/4	57 11/16	12	54 1/2	31.07	25.06	Op	5	1	5676	3544	2891	2401	1506		1.70	2.50	3.00	3.60
9	Caterpillar R4	6 7/12	11 1/8	9710°	44	60	21	13 7/8	129	62	80 5/8	13	61 1/8	40.83	35.33	Op	5	1	7211	5186	4105	3147	2345		1.70	2.40	3.00	3.70
10	Caterpillar Diesel D2	5 7/12	9	6880°	40	50	20 3/8	12	107	55 3/4	57 1/8	12	54 1/2	31.99	25.86	Op	5	1	5903	3798	3069	2485	1585		1.70	2.50	3.00	3.60
11	Caterpillar Diesel D4	6 1/2	11 1/8	10240°	44	60	21	13 7/8	121 1/16 *	62	80 5/8	13	61 1/8	41.17	35.68	Op	5	1	7852	5811	4541	3471	2230		1.70	2.40	3.00	3.70
12	Caterpillar Diesel D6	7	10 1/8	16205°	56	74	28 1/4	12 7/8	128 3/8	75	74 1/4	16	74 3/4	51.86	44.75	Op	4	1	9692	6524	4714	2939			1.70	2.50	3.20	4.60
13	Caterpillar Diesel D7	8 11/12	15 1/2	23970	....	74	35	17 1/2	162 1/4	98	80	20	93 1/4	92.84	80.44	Op	5	4	21351	13454	9090	5994	4550		1.40	2.20	3.20	4.60
14	Caterpillar Diesel D8	9 5/12	10 1/2	34170	....	78	43	17 1/2	183	113 3/4	90	22	97 5/8	131.00	113.10	Op	6	2	26208	19537	15973	13707	11266	7995	1.60	2.20	2.60	3.00
15	Cletrac (1) HG-31	5 1/4	20 1/2	3100	31	68	19	10	102	41	48	6	50	20.50	12.00	Op	3	1	3000	2000	1000				2.00	3.12	5.25	....
16	Cletrac EG-42	7	15	5200	42	62	15	15	106	54 1/2	64	8	56 1/2	30.50	22.11	Op	3	1	4150	3140	2016				2.10	2.78	3.97	....
17	Cletrac EHG-62	10	25	5600	62	68	15	15	105	76	68	8	56 1/2	30.50	22.11	Op	3	1	4150	3140	2010				2.10	2.78	3.97	....
18	Cletrac AG	7	13 1/2	6675	42		15	14 1/2	109	57	55	12	62	34.20	27.00	Op	3	1	5700	3940	2500				1.78	2.61	3.74	....
19	Cletrac BG	7 1/4	15	8400	44	52	15	17	116	60	69	14	63	50.00	38.00	Op	4	2	7600	5700	4200	2000			1.80	2.64	3.46	5.40
20	Cletrac CG	7	15	11750	48	61	15	17	120	67	70	15	74	55.39	48.40	Op	3	1	9920	5930	3250				1.87	3.06	4.45	....
21	Cletrac DG	8	15	12500	48	61	15	16	125	68 1/2	80	16	75	69.00	61.20	Op	4	2	11000	9350	7000	4156			1.84	2.50	3.30	5.30
22	Cletrac FG	5	19	27400	69		25	25	180	100	97	20	96	110.90	94.00	Op	4	2	22500	12670	8900	5440			1.61	2.75	3.66	5.00
23	Cletrac Diesel ED-42	7	15	6000	42		15	15	105	54	60	8	56			Op	3	1	4900	3150	2000				2.00	3.00	4.25	....
24	Cletrac Diesel ED4-62	10	18	5500	62		15	15	105	78	60	8	56	33.00	26.00	Op	3	1	4900	3150	2000				2.00	3.00	4.25	....
25	Cletrac Diesel EHD2-62	10	25	6300	62	68	15	15	105	76	71	8	55	33.00	26.00	Op	3	1	4270	3130	1700				2.35	3.13	4.90	....
26	Cletrac Diesel AD	7	13 1/2	7500	42	50	15	14	109	57	60	12	62	38.00	30.50	Op	3	1	6500	4520	2800				1.80	2.60	3.70	....
27	Cletrac Diesel BD	7 1/4	15	8900	44	52	15	17	116	60	73	14	63	48.09	38.05	Op	4	2	8012	5586	4127	2000			1.80	2.64	3.46	5.40
28	Cletrac Diesel DD	8	15	13300	48	61	15	16	125	68 1/2	80	16	75	67.71	61.19	Op	4	2	11890	10020	7600	4560			1.70	2.30	3.10	4.90
29	Cletrac Diesel FD	5	19	28500	69		25	25	180	100	106	20	95	113.60	96.90	Op	4	2	23160	13156	9150	5800			1.61	2.75	3.66	5.00
30	I.H.C. (2) TracTracTor T-6	5 1/3	8 3/4	6550	40	50	19 3/8	12 1/4	104	53	72 1/4	10	58 3/4	38.96	32.92	Op	5	1	7652	5215	3579	2767	1756		1.50	2.20	3.10	3.80
31	I.H.C. TracTracTor TD-6	5 1/3	8 3/4	6810	40	50	19 3/8	12 1/4	104	53	72 1/4	10	58 1/8	36.23	29.49	Op	5	1	7160	4929	3368	2641	1661		1.50	2.20	3.10	3.80
32	I.H.C. TracTracTor TD-9	6	10 1/8	9509	44	60	19 1/2	13 1/4	114	53 7/8	79	13	63 7/8	45.91	38.88	Op	5	1	9014	6637	4398	3551	2304		1.50	2.20	3.20	3.90
33	I.H.C. TracTracTor TD-14	7 1/2	11 3/4	15400	55	74	27	13 3/4	134 1/8	74	84 3/8	16	78 5/8	64.02	54.04	Op	6	2	13426	9645	7919	5683	3824	2925	1.50	2.10	2.50	3.40
34	I.H.C. TracTracTor TD-18	8 1/12	14 1/4	21750	62	74	31	15 1/2	153 1/4	82	89 7/8	18	84 5/8	84.68	70.59	Op	6	2	18973	13357	10561	7827	5157	3833	1.50	2.00	2.50	3.30

ABBREVIATIONS

*—Two used
•—Electric starter optional
*—Weight for wide tread model
(1)—Cleveland Tractor Co.
(2)—International Harvester Co.
(a)—or 444 R.P.M.
(b)—Or 650 R.P.M.
A—Air
Atw—Atwood
Bos—Bosch
Cla—Clark
Clu—Clutches
D—Distillate
Dif—Differential
Don—Donaldson
DP—Double Plate, Dry
DR—Delco-Remy
Eis—Eismann
Ele—Electric
FM—Fairbanks Morse Co.
G—Gasoline
GE—Independent Gas Engine

MANUFACTURE AND SALE OF

KIND		MANUFACTURED: Number	MANUFACTURED: Value	SOLD BY MANUFACTURERS: Total Number	Total Value	For Domestic Use Number	For Domestic Use Value	For Export Number	For Export Value
Tractors, all types, total	1940	281,832	$197,273,957	282,707	$198,429,558	238,973	$157,719,644	43,734	$40,709,914
	1939	215,462	157,577,449	216,024	158,406,176	179,460	122,356,454	36,564	36,049,722
Wheel type, all kinds, total	1940	249,397	136,796,511	249,893	137,213,072	215,673	115,989,717	34,220	21,223,355
	1939	185,558	110,856,746	185,321	111,178,377	157,497	91,686,930	27,824	19,491,447
With steel tires	1940	18,308	12,120,195	21,079	13,752,234	10,659	6,268,241	10,420	7,483,993
	1939	31,959	19,281,424	35,471	21,294,137	23,630	13,314,713	11,841	7,979,424
With rubber tires	1940	231,089	124,676,316	228,814	123,460,838	205,014	109,721,476	23,800	13,739,362
	1939	153,599	91,575,322	149,850	89,884,240	133,867	78,372,217	15,983	11,512,023
Except "all purpose," total	1940	25,138	19,815,201	26,446	20,327,074	9,824	7,394,889	16,622	12,932,185
	1939	26,973	20,523,664	30,036	23,241,868	10,291	7,930,067	19,745	15,311,801
With steel tires	1940	9,618	7,287,364	10,760	8,037,487	1,963	1,439,021	8,797	6,598,466
	1939	10,628	7,257,555	12,838	9,037,040	2,938	2,048,168	9,900	6,988,872

TRACTORS

TRACK LAYING TYPE

Travel Speeds at Normal Governed Engine R.P.M.				ENGINE										FUEL														BELT PULLEY			CAPACITIES							
Fifth Gear (M.P.H.)	Sixth Gear (M.P.H.)	Low Reverse (M.P.H.)	High Reverse (M.P.H.)	Make and Model	Cycle	No. of Cylinders—Bore and Stroke (In.)	Displacement (Cu. In.)	R.P.M. at Governed Speed	S.A.E. or Tax Hp.	Valve Arrangement	No. of Main Bearings	Diam. Main Bearings (In.)	Standard	Optional	Ignition—Make	Carburetor or Injector Pump—Make	Air Cleaner—Make	Governor—Make	Oiling System—Type	Cooling System—Type	Clutch—Make and Type	Drive Type to Traction Members	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)	Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Case (Qts.) (Each Case)	Starting Method	Line Number
		2.55		Own M	4	4-4½x5	318	1200	32.4	I	3	2½	G	K-D	FM	Zen	Don	Own	P	Pu	Roc SP	SG	12	8¾	960	Clu	6	24	10	12	5	HC	1
		2.10		Own K	4	4-5x6½	510	1050	40.0	I	3	3	G		FM	Zen	Vor	Own	P	Pu	Own SP	SG	12	8¾	1050	Clu	11½	39	14	22	5	HC	2
6.37		1.76		Own S	4	4-5¾x6½	675	1050	52.9	I	3	3⅞	G		DR	Zen	Un	Pie	P	Pu	Roc SP	SG	13⅜	10	770	Clu	12½	64	20	23	8	Ele	3
4.90	6.41	1.72	2.25	Own L	4	6-5¼x6½	844	1050	66.1	I	4	3	G		FM	Zen*	Vor	Own	P	Pu	Own DP	SG	20	15	580 (a)	Clu	19	75	24	40	8	HC	4
4.36	7.00	2.00	3.20	GM 6-71	2	6-6x4½	425	1500	43.4	I	7	3½	O			GM	Un	GM	P	Pu	Roc SP	SG	20	15	406 (b)	Clu	12	68	14	40	8	Ele	5
4.62	6.03	1.86	4.17	GM 4-71	2	4-4½x5	284	1600	28.9	I	5	3½	O			GM	Un	GM	P	Pu	Roc SP	SG	13⅜	10		Clu	9¾	44	13	24	8	Ele	6
			2.19	GM 3-71	2	3-4½x5	213	1500	21.4	I	4	3½	O			GM	Un	GM	P	Pu	Atw SP	SG	12	8¾		Clu	5¾	31	8½	21	4	Ele	7
5.10		2.10		Own R2	4	4-3¾x5	221	1525	22.5	I	5	2¾	G	D	Eis	Zen	Don	Own	P	A	Own SP	SG	12	7½	835	Clu	7	20	12	10	4½	HC▾	8
5.40		1.90		Own R4	4	4-4¼x5½	312	1400	28.9	I	5	3	G	D	Eis	Zen	Don	Own	P	A	Own SP	SG	12	8½	840	Clu	11	32	14	20	7	HC▾	9
5.10		2.10		Own D2	4	4-3¾x5	221	1525	22.5	I	5	2¾	O		N	Own	Don	Own	P	A	Own SP	SG	12	7½	835	Clu	7¾	20	13	10	4½	GE	10
5.40		1.90		Own D4	4	4-4¼x5½	312	1400	28.9	I	5	3	O		N	Own	Don	Own	P	A	Own SP	SG	12	8½	840	Clu	11	25	16	20	7	GE	11
		1.90		Own D6	4	3-5¾x8	623	850	39.6	I	4	3½	O		N	Own	Don	Own	P	A	Own SP	SG	12	10¾	850	Clu	16	45	14	20	10	GE	12
6.00		1.60	5.40	Own D7	4	4-5¾x8	831	1000	52.9	I	5	3¾	O		N	Own	Don	Own	P	A	Own SP	SG	17⅝	15	692	Clu	18	65	22	40	24	GE	13
3.60	4.90	1.60	2.60	Own D8	4	6-5¾x8	1246	950	79.3	I	7	3¾	O		N	Own	Don	Own	P	A	Own SP	SG	14	15	805	Clu	28	69	29	40	26	GE	14
		2.25		Herc IXK-3	4	4-3x4	113	1700	15.6	L	3	2	G	K	Wi	Til	Vor	Herc	P	TS	Lg DP	SG	8½	6½	1035	Dir	2¾	12	5	8		HC▾	15
		1.62		Herc OOC	4	4-4x4½	226	1300	25.6	L	3	2	G	K	Wi	Til	Vor	Herc	P	Pu	Lg DP	SG	12	8½	860	Dif	4	18	5	6		HC▾	16
		1.62		Herc OOC	4	4-4x4½	226	1300	25.6	L	3	2	G	K	Wi	Til	Vor	Herc	P	Pu	Lg DP	SG	10½	8½	860	Dif	4	18	5	6		HC▾	17
				Herc OOC	4	4-4x4½	226	1530	25.6	L	3	2	G	K	Wi	Til	Vor	Herc	P	Pu	Lg DP	SG	12	8½	1130	Dif	4	18	5	6		HC▾	18
		1.80	3.40	Herc JXD	4	6-4x4¼	320	1530	38.4	L	7	2½	G	K	DR	Til	Vor	Herc	P	Pu	Lg DP	SG	12	8½	1145	Dif	6	23	6	9		Ele	19
		2.29		Herc WXC-3	4	6-4¼x4½	383	1565	43.3	L	7	2⅝	G	K	DR	Til	Vor	Herc	P	Pu	Lg DP	SG	13	11	1015	Dif	5½	30	8	13		Ele	20
		2.20	3.90	Herc RXC	4	6-4¾x5¼	529	1300	51.3	L	7	3	G	K	DR	Til	Vor	Herc	P	Pu	Lg DP	SG	13	11	960	Dif	10¼	30	12	13		Ele	21
		1.58	2.82	Herc HXE	4	6-5¾x6	935	1120	79.4	L	7		G		Bos	Til	Vor	Herc	P	Pu	Lg DP	SG	24½	15	510	Dif	14	27	20	36		Ele	22
		1.50		Herc DOOC	4	4-4x4½	226	1530	25.6	I	5	3	O		N	Bos	Vor	Tim	P	Pu	Lg DP	SG	10½	8½	1000	Dif	4	18	9	6		Ele	23
		1.50		Buda 4DT-212	4	4-3⅝x5⅛	212	1530	21.0	I	5	3	O		N	Bos	Vor	Tim	P	Pu	Lg DP	SG	10½	8½	1000	Dif	4	18	9	6		Ele	24
		2.50		Buda 4DT-212	4	4-3⅝x5⅛	212	1530	21.0	I	5	3	O		N	Bos	Vor	Tim	P	Pu	Lg DP	SG	10½	8½	1000	Dif	4	18	9	6		Ele	25
		1.36		Herc DOOC	4	4-4x4½	226	1530	25.6	I	5	3	O		N	Bos	Vor	Tim	P	Pu	Lg DP	SG	10½	8½	1130	Dif	5½	18	14	8		Ele	26
				Herc DJXC	4	6-3¾x4½	298	1400	33.7	I	7	3	O		N	Bos	Vor	Tim	P	Pu	Lg DP	SG	12	8½	1050	Dif	5	23	12	9		Ele	27
		2.00	3.65	Herc DRX	4	6-4¾x5¼	474	1200	45.9	I	7	3½	O		N	Tim	Vor	Tim	P	Pu	Lg DP	SG	13	11	884	Dif	10½	30	16	13		Ele	28
		1.58	2.82	Herc DHX	4	6-5x6	707	1300	60.0	I	7	3¾	O		N	Bos	Vor	Tim	P	Pu	Lg DP	SG	24½	15	535	Dif	14	29	24	36		Ele	29
5.40		1.70		Own	4	4-3⅞x5¼	248	1450	24.0	I	5	2¾	G-D		Own	Own	Don	Own	P	Pu	Roc SP	SG	12¼	8	811	Clu	9½	20	9	16	1	HC▾	30
5.40		1.70		Own	4	4-3⅞x5¼	248	1450	24.0	I	5	3¾	O		N	Bos	Don	Own	P	Pu	Roc SP	SG	12¼	8	811	Clu	10½	20	9	16	1	HC▾	31
5.30		1.70		Own	4	4-4.4x5½	334	1400	31.0	I	5	4⅛	O		N	Bos	Don	Own	P	Pu	Roc SP	SG	11⅞	9	878	Clu	13	31	11	20	1½	HC▾	32
4.80	5.80	1.50	3.40	Own	4	4-4¾x6½	461	1350	36.1	I	5	3¼	O		N	Bos	Don	Own	P	Pu	Roc SP	SG	12¼	11	812	Clu	20	45	16	26	2½	HC▾	33
4.60	5.70	1.50	3.30	Own	4	6-4¾x6½	691	1200	54.1	I	7	3½	O		N	Bos	Don	Own	P	Pu	Roc SP	SG	13¼	12½	750	Clu	27	60	22	30	5	Ele	34

GM—General Motors
Herc—Hercules
HC—Hand Crank
I—In head (Valves)
K—Kerosene
L—"L" Head (Valves)
Lg—Long Mfg., Div.
N—No or none
O—Diesel Fuel
Op—Optional
P—Pressure
Pie—Pierce Governor
Pu—Pump
Roc—Rockford
SG—Spur Gear
SP—Single Plate, Dry
St—Standard
Til—Tillotson
Tim—Timken
TS—Thermo-Syphon
Un—United
Vor—Vortox
Wi—Wico
Zen—Zenith

TRACTORS, 1940 AND 1939

KIND		MANUFACTURED		SOLD BY MANUFACTURERS					
				Total		For Domestic Use		For Export	
		Number	Value	Number	Value	Number	Value	Number	Value
Except "all purpose," total,—continued									
With rubber tires	1940	15,520	$12,527,837	15,686	$12,289,587	7,861	$5,955,868	7,825	$6,333,719
	1939	16,345	13,266,109	17,198	14,204,828	7,353	5,881,899	9,845	8,322,929
"All purpose," total	1940	224,259	116,981,310	223,447	116,885,998	205,849	108,594,828	17,598	8,291,170
	1939	158,585	90,333,082	155,285	87,936,509	147,206	83,756,863	8,079	4,179,646
With steel tires	1940	8,690	4,832,831	10,319	5,714,747	8,696	4,829,220	1,623	885,527
	1939	21,331	12,023,869	22,633	12,257,097	20,692	11,266,545	1,941	990,552
With rubber tires	1940	215,569	112,148,479	213,128	111,171,251	197,153	103,765,608	15,975	7,405,643
	1939	137,254	78,309,213	132,652	75,679,412	126,514	72,490,318	6,138	3,189,094
Tracklaying type, all sizes, total	1940	24,738	$59,497,272	25,086	$60,247,797	16,154	$40,836,217	8,932	$19,411,580
	1939	20,127	45,305,160	21,104	45,803,981	13,011	29,343,314	8,093	16,460,667

American WHEEL

Line Number	TRACTOR MAKE AND MODEL	GENERAL: Wheelbase (In.)	Minimum Turning Radius—Outside (Ft.)	Ground Clearance (In.)	Shipping Weight with Rubber Tires (Lb.)	TREAD (In.): Minimum	TREAD (In.): Maximum	DRAWBAR: Lateral Adjustment (In.)	DRAWBAR: Height Above Ground (In.)	OVERALL DIMENSIONS: Length (In.)	OVERALL DIMENSIONS: Width (In.)	OVERALL DIMENSIONS: Height—To Highest Point (In.)	WHEELS: Standard Equipment	WHEELS: STEEL Diam. and Face: Front (In.)	WHEELS: STEEL Diam. and Face: Rear (In.)	WHEELS: TIRE SIZE: Front (In.)	WHEELS: TIRE SIZE: Rear (In.)	HP. RATING: Belt	HP. RATING: Drawbar	Nebraska Test Number	Power Take-off	Number of Forward Speeds	Number of Reverse Speeds	Travel Speeds at Normal Governed Engine R.P.M. (M.P.H.): First	Second	Third
1	Allis-Chalmers B	73½	7¾	22	1860	40	52	22¼	16¼	111	53	62	RT			4.00/15	8.00/24	16.31	13.54	302	Op	3	1	2.48	3.91	7.58
2	Allis-Chalmers IB	57 7/16	7	12 7/8	2140	40½	52½	N	12⅝	96	52⅝	54½	RT			5.00/15	7.50/24	16.31	13.54		Op	3	1	2.50	4.00	7.75
3	Allis-Chalmers RC	87⅛	8	28½	3000	65	76	10½	17	126	76	66	RS	24x4	40x6	4.75/15	10.00/28	19.01	16.12	316	Op	4	1	2.03	2.96	3.93
4	Allis-Chalmers C	77	7	23¼	2100	52	80	24	15⅛	114¼	68½	62¾	RT			4.00/15	9.00/24	23.81■	18.74■	364	Op	3	1	2.42	3.83	7.42
5	Allis-Chalmers WC	87⅛	8	29	3325	65	76	10½	17½	136	76	67	RS	24x4	40x6	5.50/16	11.00/28	31.43■	23.58■	304	Op	4	1	2.64	3.84	5.10
6	Allis-Chalmers WF	70	12	10	3745	46	57	10¼	13	111	57	60	RS	24x4	40x6	5.50/16	11.00/28	31.43■	23.58■	...	Op	4	1	2.64	3.84	5.10
7	Allis-Chalmers IU	76 1/16	14½	10	5160	55½	55½	N	16 7/16	121¾	66	65	RT			6.00/16	11.25/24	39.50	31.80	...	Op	4	1	2.50	3.75	4.25
8	Allis-Chalmers U	76 1/16	14½	10	5400	55½	55½	9	18½	121¾	66	65	RS	28x6	45x11	6.00/16	11.25/28	39.50	31.80	...	Op	4	1	2.73	3.55	4.95
9	Allis-Chalmers UC	87⅛	8	30	5450	70	81	8¾	19	125	81 1/16	67⅝	RS	24x5	45x11	6.00/16	11.25/28	39.50	34.00	...	Op	4	1	2.68	3.48	4.84
10	Allis-Chalmers A	90⅝	17½	10½	7000	61½	61½	17½	17¾	140	74	66	RT			7.50/18	13.50/28	50.50	41.50	...	Op	4	1	2.61	3.90	5.16
11	Avery RO-Trak B205G	80½	8½	23	3750	56	84	24	12	120⅜	75	81	RT			6.00/16	9.00/36	31.00	28.00	...	Op	3	1	2–4	3–6	9–16
12	Case V	72	9			40	60	12	14	107	55	63	RS	25x4	38x8	4.00/15	8.00/24				Op	4	1	2.30	3.10	4.00
13	Case VC	80	7½			44	82	12	14	116	74	71¼	RS	25x4	42x2½	4.00/15	7.00/32			348	Op	4	1	2.50	3.50	4.50
14	Case VO	72	9			40	60	12	11	107			RS	25x4	38x8	4.00/15	8.00/24				Op	4	1	2.30	3.10	4.00
15	Case VI	72	9			40	60	N		107	55		RT			4.00/15	8.00/24				Op	4	1	2.28	3.14	4.03
16	Case S	66	10	10		46		21	10	108½	36¾	83	RS	25x4	42x8	5.00/15	10.00/26				Op	4	1	2.00	2.75	3.75
17	Case SC	82½	10			44	80	21	13	126¼	74½	86	RS	24¾x3½	48x2½	5.00/15	9.00/38				Y	4	1	2.50	3.50	4.75
18	Case SO	66	10	10		46		21	10	108½	36¾		RS	25x4	42x8	5.00/15	10.00/26				Op	4	1	2.00	2.75	3.75
19	Case D	66⅜	10			48½		29	10⅛	116	61½	79	RS	28x5	42x11¼	6.00/16	11.00/26			349	Op	4	1	2.40	3.40	4.69
20	Case DC	89				48	84	29	13⅛	134½	55	84	RS	25x5	48x2½	5.50/16	10.00/38			340	Y	4	1	2.50	3.50	5.00
21	Case DO	66⅜	10			50¼		29	10⅛	116	62		RT			6.00/16	11.00/26				Op	4	1	2.30	3.26	4.50
22	Case DI	66⅜	10							90			RT			6.00/16	11.25/24				Op	4	1	2.89	4.14	5.67
23	Case LA	82	13					33¼	11	138	72	84	RS	30x6	48x12	7.50/20	12.00/30				Op	4	1	2.62	3.62	4.50
24	Case LI	79	13							132			RT			6.00/32	11.25/28				Op	4	1	2.44	4.76	7.10
25	Eagle 6C	78	13	22	3250	48	59	18	13	124½	60	60	RS	26x6	40x10	6.00/16	11.25/24	28.00	18.00	...	Op	4	1	1.80	3.50	5.00
26	Eagle 6B	82	7¾	28	3250	68	79	20	14	130	86	72	RS	24x4	40x10	5.50/16	11.25/24	28.00	18.00	...	Op	4	1	1.80	3.50	5.00
27	Eagle 6A	80	15	12	5000	40	46	8	14	130	70	76	RS	30x6	48x12	7.50/18	12.75/28	37.00	22.00	184	Op	3	1	2.50	3.30	5.00
28	Ford-Ferguson 9N	70	7½	13	2180	48	76	20	17½	115	64	52	RT			4.00/19	8.00/32	20.29	12.68	339	Y	3	1	2.51	3.23	7.48
29	Huber B	84½			3000	52	73	24	14	127½	61	69	RT	25x4½	50x8	5.50/16	9.00/36	28.24	21.71	292	Op	4	1	2.00	3.20	4.30
30	Huber LC	85½	9¼			73		20	15	130	82½	78	SW	25x4½	42x8	6.00/16	11.25/24	44.02	30.96	291	Op	3	1	2.40	3.50	4.50
31	Huber HK	83¾	15	12		64		24	13½	137¼	73	78	RT	34x6	50x12	7.50/18	12.75/28				Op	2	1	2.32	3.08	
32	International (1) I-4	66½	10	13⅝	3800	46			9½	112¼	58	61⅝	RT			5.50/16	11.25/24	27.50	25.00	...	Op	5	1	2.10	3.50	5.00
33	International I-6	76	11½	13¼	4700	46¾*			9½	123½	63½	68⅞	RT			6.00/16	12.75/24	38.50	33.50	...	Op	5	1	2.10	3.60	5.20
34	International ID-6	76	11½	13¼	5000	46¾*			9½	123½	63½	68⅞	RT			6.00/16	12.75/24	36.00	31.00	...	Op	5	1	2.10	3.60	5.20
35	I.H.C. Farmall (2) A	71	9	21	1780	40	68	19	10⅝	106	52	63	RT			4.00/15	8.00/24	19.06■	17.35■	329	Op	4	1	2.25	3.62	4.75
36	I.H.C. Farmall B	72½	7½	23	1780	64	92	33¾	10⅛	109	81¼	63	RT			6.00/12	8.00/24	19.22■	17.31■	331	Op	4	1	2.25	3.62	4.75
37	I.H.C. Farmall H	90	8½	23¼		44	80	26	12	126¾	75½	74	SW	22½x3½	51x6			27.90■	25.50■	333	Op	4	1	2.62	3.50	4.25
38	I.H.C. Farmall M	90	8½	23¼		52	88	26	12	126¾	84	75½	SW	22½x4	51x8			39.23■	36.70■	327	Op	4	1	2.62	3.50	4.25
39	I.H.C.-McC.-D (2) W-4	66½	10	13¼	3050	50½		18¼	10	113⅛	58½	60	SW	22½x3½	40x8	5.50/16	11.25/24	27.89■	25.67■	353	Op	5	1	2.37	3.12	4.00
40	I.H.C.-McC.-D. WD-6	76	11½	13⅛	4350	53		18¼	10	124⅜	63	66⅜	SW	22½x4	42x10	6.00/16	12.75/24	36.38	31.38	356	Op	5	1	2.37	3.12	4.00
41	I.H.C.-McC.-D. W-6	76	11½	13⅛	4050	53		18¼	10	124⅜	66	66⅜	SW	22½x4	42x10	6.00/16	12.75/24	38.74■	33.81■	355	Op	5	1	2.37	3.12	4.00
42	John Deere A	90	8½	10	3735	56	84	26½	8⅝	133	83	78½	RT			5.50/16	9.00/38				Y	6	1	2.33	3.00	4.00
43	John Deere B	85	7½	12⅞	2893	56	84	24	14	125½	83½	77⅞	RT			5.00/15	8.00/38				Y	6	1	2.33	3.25	4.00
44	John Deere G	90¼	8½	11½	4960	60	84	24¾		135	84	83	SW	24x5	51½x7					295	Y	4	1	2.25	3.25	4.25
45	John Deere H	76	7½	10½	2071	44	84	16¾	13½	111¼	79	72½	RT			4.00/15	7.00/32			312	Op	3	1	2.50	3.50	5.75
46	John Deere D	70	13½	8½	5526	52½		39½	9¼	130	66½	84½	SW	28x6	46x12					350	Y	3	1	2.25	3.25	4.00
47	Massey-Harris 101JS	78	11½	13⅝	3240			20⅛	11⅞	124½	62½	64¼	RT	28x4½	44x10	5.00/15	10.00/28	24.00	19.00	...	Op	4	1	2.10	2.90	3.90
48	Massey-Harris 101JR	82½	11½		3070			20⅛	14⅞	133		68½	RT	22x4	50x8°	4.75/15	9.00/36°	24.70	19.45	359	Op	4	1	2.60	3.60	4.90
49	Massey-Harris 101S	78	11½	12⅞		52	52	20⅛	11⅝	126¼	66¼	63¼	RT	28x4½	44x10	6.00/16	11.00/26°	36.01	23.94	306	Op	4	1	2.60	3.60	4.90
50	Massey-Harris 101R	89½	11½		3350	52	90	20⅛	14⅞	133		71½	RT	22x4	50x8°	5.00/15	10.00/38°	36.19	24.79	307	Op	4	1	2.59	3.63	4.85
51	Massey-Harris 201	89			5535				10½	140	66¾	69½	RT	30x6	46x12°	7.50/18	13.00/30°				Op	4	1	2.45	3.48	4.32
52	Massey-Harris CH	91¼		22½	3900				11	129¼	78	57⅝	SW	24x4½	52x8	5.50/16	9.00/36°	36.32	19.67	293	Op	4	1	2.40	3.30	4.10
53	Massey-Harris PA	78		11⅝	3345				10 5/8	122¼	56	53	SW	28x5	44x10	6.00/16	11.25/24°	36.78	20.30	294	Op	4	1	2.40	3.30	4.10
54	Massey-Harris 25	84	13	10½	4726				10 11/16	135	65½	57	...	30x6	48x12	7.50/18	12.75/28°	41.00	26.00	219	Op	3	1	2.50	3.25	4.00
55	M-M Twin City (3) RTU	76	7½	20½†	2720	52	84	13½	14½	112	81¼	62	RT			4.00/15	8.00/36	24.10	20.77	341	Op	4	1	2.30	3.30	4.20
56	M-M Twin City RTS	69	9	12⅜‡	2800	47½ (d)	54½ (d)	13½	14½	108	81¼	62	RT			4.00/15	8.00/36	24.10	20.77	...	Op	4	1	2.30	3.30	4.20
57	M-M Twin City RTI	66½	9	11	3350	45 (e)		4½	13	104	55	63	RT			5.00/15	9.00/24	24.10	20.77		Op	4	1	2.90	4.10	5.20
58	M-M Twin City ZTU	82	8	23†	3690	54	84	10	14½	127	87¼	87	RT	25x4½	50x8	5.50/16	9.00/38	32.88	27.97	352	Op	5	1	2.20	2.70	3.70
59	M-M Twin City ZTS	72¼	9	12⅜‡	3675	48		10	15¾	122	60	87	RT	25x4½	50x8	5.50/16	9.00/38	32.88	27.97	...	Op	5	1	2.20	2.70	3.70
60	M-M Twin City ZTI	72¾	10	11½‡	4200	49			14	123	63¼	87	RT			5.50/16	13.50/24	32.88	27.97	...	Op	5	1	2.10	2.50	3.50
61	M-M Twin City UTS	81	12	14‡	5200	54		15	15	135	72½	91½	RT	28x5	50x10	6.00/16	11.00/36	44.85	41.15	310	Op	5	1	2.70	3.40	4.70
62	M-M Twin City UTI	80	17	16‡	7200	69		17	17	122	95½	74	RT			7.50/16	11.25/28	44.85	41.15	...	Op	5	1	2.40	3.10	4.20
63	M-M Twin City UTU	88	8½	22½‡	5200	54	83	14⅜	15	139½	84½	91½	RT	24x5	50x10	6.00/16	11.00/36	45.27	37.76	319	Op	5	1	2.50	3.20	4.30
64	M-M Twin City GT	84	13⅜	11½‡	6220	57½		19	16	136½	72	92	RT	34x5¾	50x12	7.50/18	12.75/32	57.56	48.36	317	Op	4	1	2.70	3.80	4.80
65	M-M Twin City GTI	84	13⅜	12‡	10000	71		20	13	144	84	97⅜	RT			7.50/18	11.25/28	57.56	48.36	...	Op	4	1	2.80	3.90	5.00
66	Oliver–Std. & Orch. 70KD	72	11½	11¾	3600	48°	48°	18		135½	61½	77⅜	SW	27x4½	42x10	5.50/16°	10.00/24°	23.89	15.87	284	Op	4–6‡	1	2.44	3.32	4.33
67	Oliver–Row Crop 70KD	91¼	8	17¼	3750	60	72	17½		137½	80½	87⅞	SW	24x4½	55x7/16	5.50/16	9.00/40°	24.49	16.53	267	Op	4–6‡	1	2.44	3.32	4.33
68	Oliver–Std. & Orch. 70HC	72	11½	11¾	3600	48°	48°	18		135½	61½	77⅜	SW	27x4½	42x10	5.50/16°	10.00/24°	24.95	15.89	283	Op	4–6‡	1	2.44	3.32	4.33
69	Oliver–Row Crop 70HC	91¼	8	17¼	3750	60	72	17½		137½	80½	83⅞	SW	24x4½	55x⅝	5.50/16	9.00/40°	25.13	16.94	252	Op	4–6‡	1	2.44	3.32	4.33
70	Oliver–Standard 80HC	72½	12½	10	4100	50	50	16⅝		122½	61½	74⅜	SW	28x5	44x10	6.00/16°	11.25/24°	35.00	22.00	...	Op	4	1	2.42	3.23	4.17
71	Oliver–Row Crop 80HC	93¾	8½	17½	4800	60	72	17½		144	80	82	SW	24x4½	59½x7/8	6.00/16	11.25/40	35.00	23.00	...	Op	4	1	2.52	3.35	4.33
72	Oliver–Row Crop 80KD	93¾	8½	17½	4800	60	72	17½		144	80	82	SW	24x4½	59½x7/8	6.00/16	11.25/40	35.14	23.27	300	Op	4	1	2.52	3.35	4.33
73	Oliver–Standard 80KD	72½	12½	10	4100	50	50	16⅜		122½	61½	74⅜	SW	28x5	44x10	6.00/16°	11.25/24°	35.16	22.16	301	Op	4	1	2.42	3.23	4.17
74	Oliver 90	80	14	10½	6100	52	52	23½		131¼	65	80¼	SW	29x6	46x12	7.50/18	12.75/28°	44.00	28.00	...	Op	4	1	2.23	3.32	4.32
75	Oliver 99	80	14	10½	6300	52	52	23½		131¼	65	80¼	SW	29x6	46x12	7.50/18	12.75/28°	50.00	32.00	...	Op	4	1	2.23	3.32	4.32
76	Silver King (4) 440	60	9½	16	2650	44	56	26		106	54	61½	RT			5.50/16°	10.00/24°	29.20	17.80	...	Op	4	1	2.16	3.49	4.85
77	Silver King 660	81	7	27	3130	66	78	27	10–19	131	75	64	RT			6.00/16°	10.00/24°	34.80	24.70	...	Op	4	1	2.04	3.31	4.61
78	Silver King 340	87½	8	28	3180	56	84	27	10–19	138	80	64	RT			6.50/16°	9.00/36°	34.80	25.50	...	Op	4	1	2.50	4.06	5.65

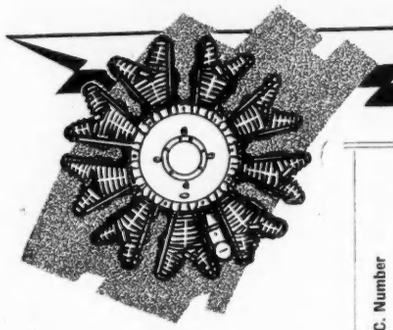
ABBREVIATIONS:
°—Front; Rear 50 inch tread
°°—Included in transmission
†—Clearance at rear axle
‡—Clearance at front axle
‡—Optional at additional cost
■—Rated using gasoline
*—Electric starter optional at additional cost
⏚—Applies to torque tube
°—Others available
(1)—International Harvester Co.
(2)—McCormick-Deering; International Harvester Co.
(3)—Minneapolis Moline Power Implement Co.
(4)—Fate-Root-Heath Co.
(a)—Front bearing; 2.4384; Center and Rear bearing, 2.4801
AL—The Electric Auto-Lite Co.
A-M—Air Maze Corp.
(b)—Front and Center bearing, 3½; Rear bearing, 4.747
BB—Borg & Beck Div.
Bos—American Bosch Corp.
(c)—1200 to 2000 R.P.M.
Ch—Chain
Cla—Clark Equipment Co.
Cont—Continental Motors
CS—Circulating splash
(d)—Rear tread; 52-84
D—Distillate
DO—Double Plate, in Oil
Don—Donaldson Co., Inc.
DP—Double Plate, Dry

Tractors

TYPE

Travel Speeds at Normal Governed Engine R.P.M. (M.P.H.)				ENGINE							FUEL										BELT PULLEY			CAPACITIES							
Fourth	Fifth	Six	Reverse	Make and Model	Number of Cylinders—Bore and Stroke (In.)	Piston Displacement (Cu. In.)	R.P.M. at Governed Speed	Valve Arrangement	Number of Main Bearings	Diameter of Main Bearings	Standard	Optional	Ignition—Make	Carburetor or Injector Pump—Make	Air Cleaner—Make	Governor—Make	Oiling System—Type	Cooling System—Type	Clutch—Make and Type	Final Drive—Type	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering—Type	Cooling System (Gal.)	Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Case (Qts.)	Starting Method	Line Number
			2.87	Own...B	4-3¼x3½	116	1400	I	3	2¼	G-K-D		FM	Zen	Don	Own	P	Pu	Roc...SP	SG	8	5½	1050	FK	2	13	4	7	¾	HC	1
			3.00	Own...B	4-3¼x3½	116	1400	I	3	2¼	G-K-D		FM	Zen	Don	Own	P	Pu	Roc...SP	SG	8	5½	1050	FK	2	13	4	7	¾	HC	2
			7.54	1.69	Own...RC	4-3⅜x3½	125	1500	I	3	2¼	G-K-D		FM	Zen	Don	Own	P	Pu	Roc...SP	SG	8	5½	1350	SA	2¼	13	4	4	½	HC	3
			2.80	Own...C	4-3⅜x3½	125	1500	I	3	2¼	G-K-D		FM	Zen	Don	Own	P	Pu	Roc...SP	SG	8	5½	1125	SA	2¼	13	4	7	¾	Ele	4
			9.77	2.20	Own...WC	4-4x4	201	1300	I	3	(a)	G-K-D		FM	Zen	Uni	Own	P	Pu	Roc...SP	SG	9	6½	1170	SA	4	15	6	4	½	Ele	5
			9.77	2.20	Own...WF	4-4x4	201	1300	I	3	(a)	G-K-D		FM	Zen	Uni	Own	P	Pu	Roc...SP	SG	9	6½	1170	FK	4	15	6	4	½	Ele	6
			11.25	3.00	Own...UM	4-4½x5	318	1200	I	3	2½	G-K-D		FM	Zen	Don	Own	P	Pu	Roc...SP	SG	10	7½	1095	FK	6	24	6	48		HC	7
			11.65	3.12	Own...UM	4-4½x5	318	1200	I	3	2½	G-K-D		FM	Zen	Don	Own	P	Pu	Roc...SP	SG	10	7½	1095	FK	6	24	6	48		HC	8
			11.43	3.06	Own...UM	4-4½x5	318	1200	I	3	2½	G-K-D		FM	Zen	Don	Own	P	Pu	Roc...SP	SG	10	7½	1095	SA	6	24	10	48	2	HC	9
			10.19	3.28	Own...A	4-4¾x6½	461	1000	I	3	(b)	G		FM	Zen	Vor	Own	P	Pu	Roc...SP	SG	13	8½	900	FK	11½	28	14	48		HC	10
				2.25	Herc. QXB-5	6-3¼x4⅛	205	1700	L	7	2½	G	D	DR	Zen	Uni	Han	P	Pu	BB...SP	IG	12	7½	827		6	15	6	4	4	Ele	11
			8.70	1.90		4-3x4⅝	124	1425	L	3	2¼	G				Uni		P	Pu	...SP	SG	10¼	6	1105	SA	3	10	4	8¼	20	HC▼	12
			9.60	2.20		4-3x4⅝	124	1425	L	3	2¼	G				Uni		P	Pu	...SP	SG	10¼	6	1105	SA	3	10	4	8¼	20	HC▼	13
			8.70	1.90		4-3x4⅝	124	1425	L	3	2¼	G				Uni		P	Pu	...SP	SG	10¼	6	1105	FK	3	10	4	8¼	20	HC▼	14
			8.65	1.94		4-3x4⅝	124	1425	L	3	2¼	G				Uni		P	Pu	...SP	SG	10¼	6	1105	FK	3	10	4	8¼	20	HC▼	15
			7.75	2.25	Own...S	4-3½x4	154	1550	I	3	2½	G	D		Zen	Uni	Own	P	Pu	TD...SO	Ch	9¼	6¼	1078	FK	4	14	5	36		HC▼	16
			9.75	2.75	Own...S	4-3½x4	154	1550	I	3	2½	G	D		Zen	Uni	Own	P	Pu	TD...SO	Ch	9¼	6¼	1078	SA	4	14	5	36		HC▼	17
			7.75	2.25	Own...S	4-3½x4	154	1550	I	3	2½	G	D		Zen	Uni	Own	P	Pu	TD...SO	Ch	9¼	6¼	1078	FK	4	14	5	36		HC▼	18
			9.46	2.69	Own...D	4-3⅞x5½	259		I	3		G-K-D		Own	Zen	Own	Own	P	Pu	TD...DO	Ch	10¼	6¼	973	FK	6½	17	7	36		HC▼	19
			10.00	2.75	Own...D	4-3⅞x5½	259		I	3		G-K-D		Own	Zen	Own	Own	P	Pu	TD...DO	Ch	11¾	6¼	846	FK	6½	17	7	42		HC▼	20
			9.07	2.58	Own...D	4-3⅞x5½	259		I	3		G-K-D		Own	Zen	Own	Own	P	Pu	TD...DO	Ch	10¼	6¼	973	FK	6½	17	7	36		HC▼	21
			11.45	3.38	Own...D	4-3⅞x5½	259		I	3	2¼	G	D	Own	Zen	Own	Own	P	Pu	TD...DO	Ch	10¼	6¼	973	SA	5¾	19	7	36		HC▼	22
			9.87	2.87	Own...LA	4-4⅝x6	403	1100	I	3		G-K-D		Own	Zen	Own	Own	P	Pu	TD...DO	Ch	13	8¼	779	FK	15¼	29		17		HC▼	23
			12.15	3.05	Own...LA	4-4⅝x6	403	1100	I	3		G		Own		Own	Own	P	Pu	TD...DO	Ch	13	8¼	779	FK	12½	26				HC▼	24
			13.00	2.00	Herc. QXB-5	6-3¼x4⅛	205	1575	L	7	2½	G		E-A	Zen	A-M	Han	P	Pu	Lg...SP	SG	8¼	7	1180	FK	3¾	15	5	5	½	HC▼	25
			13.00	2.00	Herc. QXB-5	6-3¼x4⅛	205	1575	L	7	2½	G		E-A	Zen	A-M	Han	P	Pu	Lg...SP	SG	8½	7	1180	SA	3¾	15	5	5	½	HC▼	26
				2.50	Wau...6ML	6-4x4¾	358	1416	L	7	2⅝	G		E-A	Zen	Don	Wau	P	Pu	TD...DP	SG	16	8½	625	FK	7½	30	8	30		HC▼	27
				2.69	Own...9N	4-3 3/16x3¾	120	(c)	L	3	2.248	G			Own	Mar	Uni	Novi	P	Pu	Lg...SP	IG	9	6½	136		3½	10	5	5		Ele	28
			10.00	1.80	Buda HP205	4-3 11/16x4½	205	1300	L	5	3	G		K-D	Wico	Zen	Don	Han	P	Pu	Roc...SP	IG	10	7⅜	990	SA	3¼	16	5	5½	1½	HC	29
				1.87	Wau...VIK	4-4½x5½	334	1200	I	3	2⅛	G		K-D	Bos	Zen	Don	Wau	P	Pu	TD...SP	SG	14	7⅜	705	SA	4	20	9	16½	2	HC	30
				1.83	Wau...CHK	4-4¾x6¼	516	1150	I	3	3	G		K-D	Bos	Zen	Don	Wau	P	Pu	TD...SP	SG	17	8½	616	FK	11	32	14	47		HC	31
			7.10	14.90	2.90	Own...	4-3⅜x4¼	152	1650	I	3	2½	G		D	Own	Own	Don	Own	P	Pu	Roc...SP	SG	9¾	7½	1019	FK	4½	17½	6	26		HC	32
			7.30	14.10	2.50	Own...	4-3⅞x5¼	248	1450	I	3	2¾	G		D	Own	Own	Don	Own	P	Pu	Roc...SP	SG	11	7½	899	FK	6	21	8	56		HC	33
			7.30	14.10	2.50	Own...	4-3⅞x5¼	248	1450	I	5	3¾	O				Bos	Don	Own	P	Pu	Roc...SP	SG	11	7½	899	FK	7	21	9	56		HC	34
			10.00		2.87	Own...	4-3x4	113	1400	I	3	2⅛	G		D	Own	Zen	Don	Own	P	TS	Roc...SP	SG	8½	6	1157	FK	3⅜	10	5	6	1½	HC▼	35
			10.00		2.87	Own...	4-3x4	113	1400	I	3	2⅛	G		D	Own	Zen	Don	Own	P	TS	Roc...SP	SG	8½	6	1157	SA	3⅜	10	5	6	1½	HC▼	36
			5.12		2.75	Own...	4-3⅜x4¼	152	1650	I	3	2½	G		D	Own	Own	Don	Own	P	Pu	Roc...SP	SG	9¾	7½	1019	SA	4	17½	6	24		HC▼	37
			5.12		3.12	Own...	4-3⅞x5¼	248	1450	I	3	2¾	G		D	Own	Own	Don	Own	P	Pu	Roc...SP	SG	11	7½	898	SA	6	22	8	56		HC▼	38
	5.00	14.50		2.75	Own...	4-3⅜x4¼	152	1650	I	3	2½	G-D			Own	Own	Don	Own	P	Pu	Roc...SP	SG	9¾	7½	1019	FK	4½	17½	6	26		Ele	39
	4.87	14.50		2.87	Own...	4-3⅞x5¼	248	1450	I	5	3¾	O				Bos	Don	Own	P	Pu	Roc...SP	SG	11	7½	899	FK	7	21	9	56		Ele	40
	4.87	14.50		2.87	Own...	4-3⅞x5¼	248	1450	I	3	2¾	G-D			Own	Own	Don	Own	P	Pu	Roc...SP	SG	11	7½	899	FK	6	21	8	56		Ele	41
5.33	7.00	12.25	3.75	Own...A	2-5½x6¾	321	975	I	2	2¾	D		G-K	Wico	Mar	Uni	Own	P	TS	Own...SP	SG	12¾	7⅜	975	FK	9¼	16	9½	3½			42
5.33	7.25	12.25	4.00	Own...B	2-4½x5½	175	1150	I	2	2¼	D		G-K	Wico	Mar	Don	Own	P	TS	Own...SP	SG	10⅝	6⅞	1150	FK	6¼	14	7	18			43
6.00			3.00	Own...G	2-6½x7	412	975	I	2	3	D		G-K	ES	Mar	Don	Own	P	TS	Own...DP	SG	12¾	8½	975	FK	11	18½	11	36			44
			1.75	Own...H	2-3 7/16x5	100	1400	I	2	2 1/16	D		G-K	Wico	Mar	Don	Own	P	TS	Own...SP	SG	12¼	4½	700	FK	5½	8½	4	11			45
			1.50	Own...D	2-6⅝x7	500	900	I	2	3	D		G-K	ES	Mar	Don	Own	P	TS	Own...DP	Ch	13¼	8½	900	FK	14	25	14	28			46
14.10			1.90	Cont.	4-3 11/16x4⅜	140	1500	L	3		G			AL	Mar	Don	Pie	P	Pu	BB...SP		13½	6¼	837		2¾	10	4	48		Ele	47
17.40			3.60	Cont.	4-3 11/16x4⅜	140	1500	L	3		G			AL	Mar	Don	Pie	P	Pu	BB...SP		13½	6¼	837		2¾	10	4	48		Ele	48
17.40				Chrysler	6-3½x4⅜	201	1500	L	4		G			AL	Mar	Uni	Novi	P	Pu	BB...SP	SG	13½	6¼	837	FK	4½	15	5	48		Ele	49
17.30			2.30	Chrysler	6-3½x4⅜	201	1500	L	4		G			AL	Mar	Uni	Novi	P	Pu	BB...SP	SG	13½	6¼	837	FK	4½	15	5	48		Ele	50
11.50			2.09	Chrysler	6-3⅜x4½	242	1700	L	4		G			AL	Mar	Uni	Novi	P	Pu	BB...SP	SG	13½	8	833	FK	4½	25	5	64		Ele	51
8.50			3.00	Own...	4-3⅞x5¼	248	1200	I	3	2.117	G			FM	Zen	Don	Han	CS	Pu	TD...SP	SG	12	6¼	969		5	18	12	68		HC	52
8.50			3.00	Own...	4-3⅞x5¼	248	1200	I	3	2.117	K			FM	Zen	Don	Han	CS	Pu	TD...SP	SG	12	6¼	969		5	18	12	68		HC	53
			2.50	Own...	4-4⅝x5¾		1200	I	3	2.243	K			FM	Kin	Uni	Kin	CS	Pu	TD...SP	SG	19	7⅛	325	FK	6	24	12	88		HC	54
12.00			2.60	Own...EE	4-3⅝x4	165	1400	I	2	3	G		D	FM	Mar	Uni	Own	P	Pu	TD...SP		12¼	6	933	SA	3½	14	7	18	**	HC▼	55
12.00			2.60	Own...EE	4-3⅝x4	165	1400	I	2	3	G		D	FM	Mar	Uni	Own	P	Pu	TD...SP		12¼	6	933	FK	3½	14	7	18	**	HC▼	56
14.90			3.30	Own...EE	4-3⅝x4	165	1400	I	2	3	G			FM	Mar	Uni	Own	P	Pu	Roc...SP		12¼	6	933	FK	3½	14	7	18	**	HC▼	57
4.70	14.60		1.10	Own...RE	4-3⅝x4½	186	1500	I	2		G		D	FM	Mar	Uni	Own	P	Pu	TD...SP		14	7	786	SA	3½	16¾	7	28	**	HC▼	58
4.70	14.60		1.10	Own...RE	4-3⅝x4½	186	1500	I	2		G		D	FM	Mar	Uni	Own	P	Pu	TD...SP		14	7	786	FK	3½	16¾	7	28	**	HC▼	59
4.30	13.50		1.00	Own...RE	4-3⅝x4½	186	1500	I	2		G		D	FM	Mar	Uni	Own	P	Pu	TD...SP		14	7	786	FK	3½	16¾	7	28	**	HC▼	60
6.20	20.10		1.30	Own...KEF	4-4¼x5	284	1275	I	3	2 3/16	G		D	FM	Mar	Uni	Own	P	Pu	TD...SP		15½	7	727	FK	6	21½	9	52	**	HC▼	61
5.60	18.00		1.10	Own...KEF	4-4¼x5	284	1275	I	3	2 3/16	G			FM	Mar	Uni	Own	P	Pu	Roc...SP		15½	7	727	FK	6	21½	9	52	**	HC▼	62
5.70	18.50		1.20	Own...KEF	4-4¼x5	284	1275	I	3	2 3/16	G		D	FM	Mar	Uni	Own	P	Pu	TD...SP		15½	7	727	SA	6	21½	9	52	**	HC▼	63
9.60			2.80	Own...GE	4-4⅝x6	403	1075	I	3	2 1/16	G		D	FM	Mar	Don	Own	P	Pu	TD...SP		16	7½	650	FK	7	30	10	52	**	HC▼	64
9.90			2.90	Own...GE	4-4⅝x6	403	1075	I	3	2 1/16	G		D	FM	Mar	Don	Own	P	Pu	TD...SP		16	7½	750	FK	7	30	10	52	**	HC▼	65
5.88	7.25‡	12.8‡	2.44	Own...	6-3½x4⅝	201	1500	I	4	2¼	D		G	Bos	Zen	Don	Own	P	Pu	BB...SP	SG	12¾	7¼	774	FK	4½	15	5	26	**	HC▼	66
5.88	7.25‡	12.8‡	2.44	Own...	6-3½x4⅝	201	1500	I	4	2¼	D		G	Bos	Zen	Don	Own	P	Pu	BB...SP	SG	12¾	7¼	774	SA	4½	15	5	26	**	HC▼	67
5.88	7.25‡	12.8‡	2.44	Own...	6-3½x4⅝	201	1500	I	4	2¼	G			Bos	Zen	Don	Own	P	Pu	BB...SP	SG	12¾	7¼	774	FK	4½	15	5	26	**	HC▼	68
5.88	7.25‡	12.8‡	2.44	Own...	6-3½x4⅝	201	1500	I	4	2¼	G			Bos	Zen	Don	Own	P	Pu	BB...SP	SG	12¾	7¼	774	SA	4½	15	5	26	**	HC▼	69
5.60			2.96	Own...	4-4¼x5¼	298	1200	I	3	2⅝	G			Bos	Mar	Don	Own	P	Pu	BB...SP	SG	14½	7¼	731	FK	8½	17	8	48	**	HC▼	70
5.82			3.08	Own...	4-4¼x5¼	298	1200	I	3	2⅝	G			Bos	Mar	Don	Own	P	Pu	BB...SP	SG	14½	7¼	731	SA	8½	17	8	48	**	HC	71
5.82			3.08	Own...	4-4½x5¼	334	1200	I	3	2⅝	D		G	Bos	Mar	Don	Own	P	Pu	BB...SP	SG	14½	7¼	731	SA	8½	17	8	48	**	HC	72
5.60			2.96	Own...	4-4½x5¼	334	1200	I	3	2⅝	D		G	Bos	Mar	Don	Own	P	Pu	BB...SP	SG	14½	7¼	731	FK	8½	17	8	48	**	HC▼	73
5.55			3.23	Own...	4-4¾x6¼	443	1125	I	3	3	D		G	Bos	Mar	Don	Own	P	Pu	BB...SP	SG	16¾	8¼	596	FK	10½	34	12	48	**	HC▼	74
5.55			3.23	Own...	4-4¾x6¼	443	1125	I	3	3	G			Bos	Mar	Don	Own	P	Pu	BB...SP	SG	16¾	8¼	596	FK	10½	34	12	48	**	HC▼	75
15.30			1.61	Herc. IXB-3	4-3¼x4	133	1500	L	3	2	G			Wico	Mar	Don	Han	P	Pu	BB...SP	SG	6¾	6½	1800	FK	3	12	3	8	¾	HC▼	76
15.25			1.53	Own...41	4-3 7/16x4⅝	162	1500	L	3	2¼	G			W-F	Mar	Don	Pie	P	Pu	BB...SP	SG	8	6½	1800	SA	3	12	4	8	¾	HC▼	77
18.25			1.88	Own...41	4-3 7/16x4⅝	162	1500	L	3	2¼	G			W-F	Mar	Don	Pie	P	Pu	BB...SP	SG	8	6½	1800	SA	3	12	4	8	¾	HC▼	78

DR—Delco-Remy Div.
(e)—Rear tread
E-A—Edison Splitdorf or Auto-Lite
Ele—Electric Starting
ES—Edison Splitdorf
FK—Front Axle Knuckle
FM—Fairbanks Morse
G—Gasoline
Han—Handy Governor Corp.
HC—Hand Crank
Herc—Hercules Motors Corp.
I—In Head (Valves)
IG—Internal Gears
K—Kerosene
Kin—Kingston Products Corp.
L—"L" Head (Valves)
Lg—Long Mfg. Co.
Mar—Marvel-Schebler Carb. Div.
N—No or None
O—Diesel Fuel
Op—Optional
P—Pressure
Pie—Pierce Governor Co.
Pu—Pump
Roc—Rockford Drilling Machine Div.
RS—Rubber Tires or Steel Wheels
RT—Rubber Tires
SA—Solid Axle
SG—Spur Gear
SO—Single Plate, in Oil
SP—Single Plate, Dry
SW—Steel Wheels
TD—Twin Disc Clutch Co.
TS—Thermo-Syphon
Uni—United Air Cleaner Div.
Vor—Vortox Mfg. Co.
W-F—Wico or Fairbanks-Morse
Wau—Waukesha Motor Co.
Y—Yes
Zen—Zenith Carburetor Div.



AMERICAN AIRCRAFT ENGINES

ENGINE MAKE AND MODEL

	A. T. C. Number	CYLINDER DATA: Arrangement	Cooling Medium	Number of Cylinders	Bore and Stroke (In.)	Total Piston Displacement (Cu. In.)	Compression Ratio	B.M.E.P. at Cruising Hp. (Lb. per Sq. In.)	Blower Ratio	Cylinder Material	No. of Valves per Cylinder: Intake	Exhaust	Valve Arrangement	RATINGS: Maximum (Except Take-off): Horsepower	R. P. M.	At Sea Level or Altitude (Ft.)	Take-off: Horsepower	R. P. M.	Cruising: Horsepower	R. P. M.	Octane Rating of Fuel Required	Propeller Drive	Weight (Lb.): Engine—Dry Without Hub or Starter	Per Cruising Hp.	Carburetor—Number and Make Fitted	Ignition System: Make	Current Source	Number	Starting: Make	Method	Installation Dimensions Overall—Ins.: Length	Height or O. D.	Width	Height Above Engine Bed (In.)	Diam. Mount., Ring or Distance Between Bearers
Akron Funk (1)	E	201	IV-L	Liq	4-3⅞x4¼	200.5	6.25	117‡	No	3	1	1	L	63	2125	SL	63	2125			73	D	250	3.97‡	1-Zen	Bos	Mag	1			36	24	18	7	
Allison	C15		V-60	Liq	12-5½x6	1710.0	6.25	146	8.77	1	2	2	OH	980	2600	12000	1090	3000	720	2280	100	G	1340	1.86	1-Str	Scin	Mag	1	Ecl	EM	98 1/16	41 3/16	29 3/16	23 1/16	18 3/16
Continental	Series 7-A-50	190	Hor	Air	4-3⅞x3⅝	171.0	5.40	108	No	5	1	1	I	50	1900	SL	50	1900	42	1800	65	D	161	3.83	1-Str°	Scin	Mag	1			30 3/16	22 1/16	31 1/16		
Continental	Series 8-A-50	190	Hor	Air	4-3⅞x3⅝	171.0	5.40	108	No	5	1	1	I	50	1900	SL	50	1900	42	1800	65	D	170	4.05	1-Str°	Scin	Mag	2			30 3/16	22 1/16	31 1/16		
Continental	Series 9-A-50	190	Hor	Air	4-3⅞x3⅝	171.0	5.40	108	No	5	1	1	I	50	1900	SL	50	1900	42	1800	65	D	176	4.19	1-Str°	Scin	Mag	2	Ecl*	EM	32 1/16	22 1/16	31 1/16		
Continental	Series 7-A-65	205	Hor	Air	4-3⅞x3⅝	171.0	6.30	114	No	5	1	1	I	65	2300	SL	65	2300	53	2150	73	D	161	3.04	1-Str°	Scin	Mag	1			30 3/16	22 1/16	31 1/16		
Continental	Series 8-A-65	205	Hor	Air	4-3⅞x3⅝	171.0	6.30	114	No	5	1	1	I	65	2300	SL	65	2300	53	2150	73	D	170	3.21	1-Str°	Scin	Mag	2			30 3/16	22 1/16	31 1/16		
Continental	Series 9-A-65	205	Hor	Air	4-3⅞x3⅝	171.0	6.30	114	No	5	1	1	I	65	2300	SL	65	2300	53	2150	73	D	176	3.32	1-Str°	Scin	Mag	2	Ecl*	EM	32 1/16	22 1/16	31 1/16		
Continental	Series 8-A-75	213	Hor	Air	4-3⅞x3⅝	171.0	6.30	119	No	5	1	1	I	75	2600	SL	75	2600	63	2450	73	D	170	2.70	1-Str°	Scin	Mag	2			30 3/16	22 1/16	31 1/16		
Continental	Series 9-A-75	213	Hor	Air	4-3⅞x3⅝	171.0	6.30	119	No	5	1	1	I	75	2600	SL	75	2600	63	2450	73	D	176	2.79	1-Str°	Scin	Mag	2	Ecl*	EM	32 1/16	22 1/16	31 1/16		
Continental	Series 8-A-80	217	Hor	Air	4-3⅞x3⅝	171.0	7.50	117	No	5	1	1	I	80	2700	SL	80	2700	63	2500	80	D	170	2.70	1-Str°	Scin	Mag	2			30 3/16	22 1/16	31 1/16		
Continental	Series 9-A-80	217	Hor	Air	4-3⅞x3⅝	171.0	7.50	117	No	5	1	1	I	80	2700	SL	80	2700	63	2500	80	D	176	2.79	1-Str°	Scin	Mag	2	Ecl*	EM	32 1/16	22 1/16	31 1/16		
Continental	Series 6A-W670	162	Rad	Air	7-5¼x4⅝	668.0	5.40	106	No	5	1	1	I	220	2075	SL	220	2075	169	1900	65	D	465	2.75	1-Str	Scin	Mag (a)	2	Ecl*	EM	34 3/16	42 1/4			20
Continental	Series KA-W670	162	Rad	Air	7-5¼x4⅝	668.0	5.40	109	No	5	1	1	I	225	2175	SL	225	2175	189	2050	65	D	465	2.46	1-Str	Scin	Mag (a)	2	Ecl*	EM	34 3/16	42 1/4			20
Continental	Series MA-W670	162	Rad	Air	7-5¼x4⅝	668.0	6.10	116	No	5	1	1	I	240	2200	SL	240	2200	202	2075	80	D	475	2.35	1-Str	Scin	Mag (a)	2	Ecl*	EM	34 3/16	42 1/4			20
Continental	4AC176-B2	221	Hor	Air	4-4x3⅝	176.0	6.30	107	No	4	1	1	I	65	2200	SL	65	2200	48¾	2050	73	D	167	3.43	1-MS	Eis	Mag	2		PS	28 5/16	19 3/16	30 1/4	8 3/16	
Franklin (2)	4AC176-F2	221	Hor	Air	4-4x3½	176.0	7.00	117	No	4	1	1	I	80	2500	SL	80	2500	60	2300	80	D	168	2.80	1-MS	Eis	Mag	2		PS	28 5/16	19 3/16	30 1/4	8 3/16	
Franklin	4AC176-F3	221	Hor	Air	4-4x3½	176.0	7.00	117	No	4	1	1	I	80	2500	SL	80	2500	60	2300	80	D	202	3.37	1-MS	Eis	Mag	2	Au	EM	30 1/16	24 1/16	30 1/4	13 3/16	
Franklin	4AC199-E2	226	Hor	Air	4-4¼x3½	199.0	7.00	117	No	4	1	1	I	90	2500	SL	90	2500	67½	2300	80	D	175	2.60	1-MS	Eis	Mag	2		PS	28 5/16	19 3/16	30 1/4	8 3/16	
Franklin	4AC199-E3	226	Hor	Air	4-4¼x3½	199.0	7.00	117	No	4	1	1	I	90	2500	SL	90	2500	67½	2300	80	D	209	3.10	1-MS	Eis	Mag	2	Au	EM	30 1/16	24 1/16	30 1/4	13 3/16	
Franklin	4AC199-E3	226	Hor	Air	4-4¼x3½	199.0	7.00	117	No	4	1	1	I	120	2600	SL	120	2600	90	2350	80	D	233	2.59	1-MS	Eis	Mag	2		PS	37 1/16	19 3/16	30 1/4	8 3/16	
Franklin	6AC264-F2	222	Hor	Air	6-4x3½	264.0	7.00	115	No	4	1	1	I	120	2600	SL	120	2600	90	2350	80	D	267	2.97	1-MS	Eis	Mag	2	Au	EM	40	24 1/16	30 1/4	13 3/16	
Franklin	6AC264-F3	222	Hor	Air	6-4x3½	264.0	7.00	115	No	4	1	1	I	120	2600	SL	120	2600	90	2350	80	D	246	2.52	1-MS	Eis	Mag	2		PS	37 1/16	19 3/16	30 1/4	8 3/16	
Franklin	6AC298-F2	225	Hor	Air	6-4¼x3½	298.0	7.00	113	No	4	1	1	I	130	2550	SL	130	2550	97½	2300	80	D	280	2.87	1-MS	Eis	Mag	2	Au	EM	40	24 1/16	30 1/4	13 3/16	
Franklin	6AC298-F3	225	Hor	Air	6-4¼x3½	298.0	7.00	113	No	4	1	1	I	130	2550	SL	130	2550	97½	2300	80	D	280	2.87	1-MS	Eis	Mag	2	Au	EM	40	24 1/16	30 1/4	13 3/16	
Jacobs	L-4M	121	Rad	Air	7-5¼x5	757.0	5.38	96	No	5	1	1	I	225	2000	SL	245	2200	175	1900	73	D	497	2.84	1-Str	Scin	Mag	2	Ecl	EM	35 7/16	43 1/16			16 1/16
Jacobs	L-4MB	121	Rad	Air	7-5¼x5	757.0	5.38	96	No	5	1	1	I	225	2000	SL	245	2200	175	1900	73	D	495	2.83	1-Str	Scin	B.M.	(o)	Ecl	EM	35 7/16	43 1/16			16 1/16
Jacobs	L-4MA7	121	Rad	Air	7-5¼x5	757.0	5.38	96	No	5	1	1	I	225	2000	SL	245	2200	175	1900	73	D	500	2.86	1-Str	Scin	Mag	2	Ecl	EM	35 3/16	43 1/16			16 1/16
Jacobs	L-4PT	121	Rad	Air	7-5¼x5	757.0	5.38	93	No	5	1	1	I	225	2000	SL	225	2000	165	1850	65	D	515	3.12	1-Str	Scin	Mag	2	Ecl	EM	39 3/4	43 1/16			22
Jacobs	L-5MB	156	Rad	Air	7-5½x5	831.0	6.00	100	No	5	1	1	I	285	2000	SL	300	2125	200	1900	73	D	508	2.54	1-Str	Scin	B.M.	(b)	Ecl	EM	35 7/16	43 1/16			16 1/16
Jacobs	L-5M	156	Rad	Air	7-5½x5	831.0	6.00	100	No	5	1	1	I	285	2000	SL	300	2125	200	1900	73	D	504	2.52	1-Str	Scin	Mag	2	Ecl	EM	35 3/16	43 1/16			16 1/16
Jacobs	L-5MA7	156	Rad	Air	7-5½x5	831.0	6.00	100	No	5	1	1	I	285	2000	SL	300	2125	200	1900	73	D	510	2.55	1-Str	Scin	B.M.	(b)	Ecl	EM	35 7/16	43 1/16			16 1/16
Jacobs	L-6M	195	Rad	Air	7-5½x5½	914.0	6.00	100	No	5	1	1	I	300	2100	3700	330	2200	220	1900	80	D	557	2.53	1-Str	Scin	Mag	2	Ecl	EM	36 1/16	45 5/16			16 1/16
Jacobs	L-6MB	195	Rad	Air	7-5½x5½	914.0	6.00	100	No	5	1	1	I	300	2100	3700	330	2200	220	1900	80	D	555	2.52	1-Str	Scin	B.M.	(b)	Ecl	EM	36 1/16	45 5/16			16 1/16
Jacobs	L-6MA	195	Rad	Air	7-5½x5½	914.0	6.00	100	No	5	1	1	I	300	2100	3700	330	2200	220	1900	80	D	560	2.54	1-Str	Scin	Mag	2	Ecl	EM	36 1/16	45 5/16			16 1/16
Ken-Royce (3)	5E	48	Rad	Air	5-4¼x3¾	250.5	5.40	114‡	No	3	1	1	I	70	1950	SL					73	D	245	3.50‡	1-Str	BS	Mag	2		PE	23¾	33¼			
Ken-Royce	5F	46	Rad	Air	5-4¼x3¾	266.0	6.00	119‡	No	3	1	1	I	90	2250	SL					73	D	226	2.51‡	1-Hol	BS	Mag	2		PE	24 1/16	33¼			
Ken-Royce	7F	52	Rad	Air	7-4¼x3¾	372.0	6.00	115‡	No	3	1	1	I	120	2225	SL					73	D	285	2.38‡	1-Hol	BS	Mag	2		PE	24 1/16	33¼			
Kinner	K-5	3	Rad	Air	5-4¼x5¼	372.0	5.00	99	No	5	1	1	I	100	1810	SL	100	1810	75	1610	73	D	275	3.67	1-SH	BS	Mag	2	Ecl	CEH	32 1/16	45 5/8			14
Kinner	B5-B54	51	Rad	Air	5-4⅝x5¼	441.0	5.25	94	No	5	1	1	I	125	1925	SL	125	1925	90	1725	73	D	310	3.44	1-SH	BS	Mag	2	Ecl	CEH	32 1/16	45 5/8			14
Kinner	R5-2	153	Rad	Air	5-5x5½	540.0	5.50	102	No	5	1	1	I	160	1850	SL	160	1850	115	1650	73	D	330	2.87	1-Str	BS	Mag	2	Ecl	CEH	32 1/16	45 5/8			14
Kinner	C-5	62	Rad	Air	5-5⅝x5¾	715.0	5.25	101	No	5	1	1	I	210	1900	SL	210	1900	155	1700	73	D	420	2.71	1-Str	BS	Mag	2	Ecl	CEH	34 1/16	50			19¼
Kinner	C-7	122	Rad	Air	7-5⅝x6	1044.0	5.25	100	No	5	1	1	I	300	1800	SL	300	1800	210	1600	73	D	600	2.86	1-Str	BS	Mag	2	Ecl	CEH	44 1/16	47¾			20
Kinner	C-7	122	Rad	Air	7-5⅝x6	1044.0	5.25	100	No	5	1	1	I	300	1800	5000	300	1800	210	1600	73	D	600	2.86	1-Str	BS	Mag	2	Ecl	CEH	44 1/16	47¾			20
Kinner	SC-7	175	Rad	Air	7-5⅝x6	1044.0	5.50	107	No	5	1	1	I	350	1900	5000	350	1900	240	1700	73	D	650	2.71	1-Str	BS	Mag	2	Ecl	CEH	45 1/16	47¾			20
Lambert (4)	R-266	38	Rad	Air	5-4¼x3¾	265.9	5.55	113‡	No	1	1	1	I	90	2375	900			63		73	D	222	3.52	1-Str	BS	Mag	2	Ecl	DE	30 5/8	34 1/4		11	13¾
Lycoming (5)	O-145A2	199	Hor	Air	4-3⅝x3½	144.5	5.65	110	No	4	1	1	I	55	2300	SL	55	2300	42	2100	73	D	165	3.93	1-MS	Scin	Mag	2			24 5/8	20 1/16	29 1/16		10¼
Lycoming	O-145A3	199	Hor	Air	4-3⅝x3½	144.5	5.65	110	No	4	1	1	I	55	2300	SL	55	2300	42	2100	73	D	167	3.97	1-MS	Scin	Mag	2	Ecl	EM	24 5/8	22 1/16	29 1/16		10¼
Lycoming	O-145B2	210	Hor	Air	4-3⅝x3½	144.5	6.50	112	No	4	1	1	I	65	2550	SL	65	2550	47	2300	73	D	165	3.51	1-MS	Scin	Mag	2			24 5/8	20 1/16	29 1/16		10¼
Lycoming	O-145B3	210	Hor	Air	4-3⅝x3½	144.5	6.50	112	No	4	1	1	I	65	2550	SL	65	2550	47	2300	73	D	167	3.55	1-MS	Scin	Mag	2	Ecl	EM	24 5/8	22 1/16	29 1/16		10¼
Lycoming	O-145C2	210	Hor	Air	4-3⅝x3½	144.5	6.50	108	No	4	1	1	I	75	3100	SL	75	3100	55	2800	73	D	165	3.00	1-MS	Scin	Mag	2			24 5/8	20 1/16	29 1/16		10¼
Lycoming	O-145C3	210	Hor	Air	4-3⅝x3½	144.5	6.50	108	No	4	1	1	I	75	3100	SL	75	3100	55	2800	73	D	167	3.04	1-MS	Scin	Mag	2	Ecl	EM	24 5/8	22 1/16	29 1/16		10¼
Lycoming	GO-145C2	210	Hor	Air	4-3⅝x3½	144.5	6.50	106	No	4	1	1	I	75	3200	SL	75	3200	56	2900	73	G	193	3.45	1-MS	Scin	Mag	2	Ecl	EM	29 5/8	20 1/16	29 1/16		10¼
Lycoming	GO-145C3	210	Hor	Air	4-3⅝x3½	144.5	6.50	106	No	4	1	1	I	75	3200	SL	75	3200	56	2900	73	G	195	3.48	1-MS	Scin	Mag	2	Ecl	EM	29 5/8	22 1/16	29 1/16		10¼
Lycoming	R680-B4D	108	Rad	Air	9-4⅝x4½	680.4	5.50	101	1.00	5	1	1	I	225	2100	SL			165	1900	73	D	492	2.98	1-Str	Scin	Mag	1	Ecl	EM	37 7/16				19¼
Lycoming	R680-D5	172	Rad	Air	9-4⅝x4½	680.4	5.50	122	1.00	5	1	1	I	245	2100	SL	260	2300	210	2000	80	D	505	2.40	1-Str	Scin	Mag	1	Ecl	EM	37 7/16				19¼
Lycoming	R680-D6	173	Rad	Air	9-4⅝x4½	680.4	5.50	113	1.00	5	1	1	I	225	2100	SL	245	2300	195	2000	73	D	505	2.59	1-Str	Scin	Mag	1	Ecl	EM	37 7/16				19¼
Lycoming	R680-E1	202	Rad	Air	9-4⅝x4½	680.4	6.20	122	1.00	5	1	1	I	275	2200	SL	290	2300	210	2000	80	D	514	2.45	1-Str	Scin	Mag	1	Ecl	EM	37 7/16				19¼
Lycoming	R680-E2	202	Rad	Air	9-4⅝x4½	680.4	5.50	116	1.00	5	1	1	I	265	2200	SL	280	2300	200	2000	73	D	514	2.57	1-Str	Scin	Mag	1	Ecl	EM	37 7/16				19¼

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American

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	Rated or Tax Hp.	MAXIMUM BRAKE Hp.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.)	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
					With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
														Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Allis-Chalmers B-15	Tr,Ind	4-3¼x3½	16.9	24-1800	22-1800	116.2	4.92	74-1100	W	In	I	Sil	1.43	1.31	1.20	1.03	.378	.378	.341	.341
2	Allis-Chalmers W-25	Tr,Ind	4-4x4	25.6	44-1800	40-1800	201.1	5.00	128-1200	W	In	I	Sil	1.68	1.50	1.50	1.32	.376	.376	.372	.372
3	Allis-Chalmers U-40	Tr,Ind	4-4½x5	32.4	56-1400	51-1400	318.0	4.75	200-1000	W	In	I	Sil	2.03	1.78	1.75	1.50	.375	.375	.372	.372
4	Allis-Chalmers E-60	Tr,Ind	4-5¼x6½	44.1	86-1200	78-1200	563.0	5.20	400-700	W	In	I	Sil	2.21	2.21	2.00	2.00	.440	.417	.497	.497
5	Allis-Chalmers L-90	Tr,Ind	6-5¼x6½	66.1	128-1200	117-1200	844.0	5.20	590-700	W	In	I	Sil	2.21	2.21	2.00	2.00	.440	.417	.497	.497
6	Autocar 331	T	6-3⅜x5	33.7	101-2600	95-2600	331.0	5.75	242-1100	N	Se	L	3140	1.90	1.65	1.56	1.43	.375	.375	.437	.437
7	Autocar 377	T	6-4x5	38.4	112-2600	106-2600	377.0	5.75	280-1100	N	Se	L	3140	1.90	1.78	1.68	1.56	.375	.375	.437	.437
8	Autocar 408	T	6-4⅛x5¼	39.6	114-2400	104-2400	408.0	5.75	278-1100	N	Se	L	CNS	2.06	1.93	1.87	1.75	.375	.375	.437	.437
9	Autocar 447	T	6-4¼x5¼	43.3	118-2400	108-2400	447.0	5.75	312-1100	N	Se	L	CNS	2.06	1.93	1.87	1.75	.375	.375	.437	.437
10	Autocar 501	T	6-4½x5¼	48.6	130-2400	120-2400	501.0	5.75	352-1100	N	Se	L	CNS	2.06	1.93	1.87	1.75	.375	.375	.437	.437
11	Brennan Imp. De Luxe	M	4-2x3	7.5	20-3900	15-3900	45.0	7.00	31-2500	N	Se	I	Sil	1.00	1.00	.875	.875	.250	.250	.312	.312
12	Brennan 20	Ind	4-2¼x3⅛	8.0	20-3900	15-3900	50.0	7.40	34-3200	N	Se	L	Sil	1.12	1.00	.875	.875	.250	.250	.312	.312
13	Brennan Imp. De Luxe Spec.	M	4-2¼x3⅛	8.1	25-4000	20-4000	50.0	7.40	34-3200	N	Se	I	Sil	1.12	1.00	.875	.875	.250	.250	.312	.312
14	Brennan M-4	M	4-4x5	25.6	45-1800	38-1800	251.0	5.00	155-1000	N	Se	L	NCI								
15	Brennan CE	Ind	4-4½x5	32.4	54-1600	45-1600	318.0	5.00	203-1000	N	Se	L	Sil	2.00	2.00	1.87	1.87	.375	.375	.375	.375
16	Brennan E-4	M	4-4½x5	32.4	54-1600	45-1600	318.0	5.00	203-1000	N	Se	L	Sil	2.00	2.00	1.87	1.87	.375	.375	.375	.375
17	Brennan B-70	T,B,Tr,Ind	6-4x5½	38.4	90-2000	75-2000	415.0	4.50	278-900	N	Se	I	Sil	2.12	2.12	2.00	2.00	.375	.375	.437	.437
18	Brennan 100	M	6-4x5½	38.4	94-2000	80-2000	415.0	6.00	278-900	N	Se	I	Sil	2.12	2.12	2.00	2.00	.375	.375	.437	.437
19	Brennan B-100	T,B,Tr,Ind	6-4⅜x5½	45.9	94-2000	80-2000	496.0	4.50	350-1200	N	Se	I	Sil	2.12	2.12	2.00	2.00	.375	.375	.437	.437
20	Brennan 125	M	6-4⅜x5½	45.9	110-2200	94-2200	496.0	6.00	350-1200	N	Se	I	Sil	2.12	2.12	2.00	2.00	.375	.375	.437	.437
21	Brennan 150	M	6-4½x6½	48.6	150-2000	130-2000	620.3	6.00	500-1200	N	Se	I	Sil	2.50	2.50	2.12	2.12	.437	.437	.500	.500
22	Bridgeport F-5	M	1-3¾x4½	5.0		6-1200	49.0			N	In	I	Sil	1.50	1.50					.312	.312
23	Bridgeport 71	M	1-5½x6½	8.0		10-600	154.0			N	Se	L	NCI	2.25	2.25	2.00	2.00			.500	.500
24	Bridgeport F-10	M	2-3¾x4½	10.0		12-1200	99.0			N	In	I	Sil	1.50	1.50					.312	.312
25	Bridgeport 162	M	2-5½x6½	16.0		20-650	308.0			N	Se	L	NCI	2.25	2.25	2.00	2.00			.500	.500
26	Bridgeport 182	M	2-6½x7½	20.0		25-500	497.0			N	Se	L	NCI	2.37	2.37	2.00	2.00			.500	.500
27	Bridgeport 243	M	3-6½x7½	32.0		40-500	746.0			N	Se	L	NCI	2.37	2.37	2.00	2.00			.500	.500
28	Bridgeport F-20	M	4-2¾x4	25.0		27-2500	95.0			N	In	L	Sil	1.12	1.12					.312	.312
29	Bridgeport Pilot	M	4-4¼x5	50.0		55-2000	283.0		225-2000	N	In	L	Sil	1.87	1.87	1.62	1.62			.375	.375
30	Bridgeport 304	M	4-5½x6½	40.0		45-700	617.0			N	Se	L	NCI	2.25	2.25	2.00	2.00			.500	.500
31	Bridgeport 404	M	4-6½x7½	55.0		65-600	995.0			N	Se	L	NCI	2.37	2.37	2.00	2.00			.500	.500
32	Bridgeport Piloteer	M	6-4x4¾	76.0		80-2200	358.0		300-2200	N	In	L	Sil	2.00	2.00	1.75	1.75			.375	.375
33	Buda HP-205	T,Tr	4-3⅛x4½	23.2	51-2400	43-2400	205.0	4.76	112-1200	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
34	Buda HP-217	T,Tr	4-3⅛x4¾	23.2	55-2400	47-2400	217.0	5.50	123-1200	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
35	Buda 4HM-217-MD	M	4-3⅛x4¾		56-2400	56-2400	217.0	5.70	148-1400	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
36	Buda 4HM-217-MHD	M	4-3⅛x4¾			48-1800	217.0	5.70	146-1400	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
37	Buda 4HM-217-HD	M	4-3⅛x4¾			30-1200	217.0	5.70	131-1200	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
38	Buda HP-234	T,Tr	4-3⅛x5½	23.2	59-2400	50-2400	234.0	5.83	133-1210	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
39	Buda KT-281	Tr	4-4½x5¼	27.2	49-1750	42-1750	281.0	4.50	148-1000	N	Se	L	Sil	1.87	1.87	1.62	1.62	.281	.312	.372	.372
40	Buda YR-425	T	4-4¾x6	36.0	57-1400	48-1400	425.3	3.80	226-800	N	Se	L	2112	2.37	2.37	2.12	2.12	.281	.312	.434	.434
41	Buda BTU	T,B,Tr	4-5x6½	40.0	61-1200	52-1200	510.5	4.65	291-650	N	Se	L	2112	2.50	2.50	2.25	2.25	.375	.375	.434	.434
42	Buda FR	T,B,Tr	4-5¼x6½	48.5	78-1200	66-1200	618.0	4.60	350-600	N	Se	L	2112	2.50	2.50	2.25	2.25	.375	.375	.434	.434
43	Buda JV-4	Tr,Ind	4-5⅜x7⅛	52.9	85-1200	72-1200	740.0	3.85	402-700	N	Se	L	Sil	2.75	2.78	2.50	2.50	.375	.375	.497	.497
44	Buda JK-4	Tr,Ind	4-6x7½	57.6	115-1200	98-1200	806.0	4.70	475-700	N	Se	L	2112	2.93	2.93	2.50	2.50	.375	.375	.497	.497
45	Buda JL-877	Tr,Ind	4-6¼x7⅛	62.5	122-1200	114-1200	874.0	4.80	535-700	N	Se	L	2112	2.93	2.93	2.50	2.50	.375	.375	.497	.497
46	Buda HP-260	T,B	6-3½x4½	29.4	68-2800	58-2800	260.0	4.75	139-1100	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
47	Buda HP-298	T,B,Tr	6-3⅝x4½	33.7	77-2800	65-2800	298.0	4.75	161-1100	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
48	Buda HP-326	T,B,Tr	6-3½x4¾	34.8	78-2400	66-2400	326.0	5.40	188-1100	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
49	Buda HP-351	T,Tr	6-3½x5½	34.8	84-2400	71-2400	351.0	5.83	201-900	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
50	Buda 6HPM-326-MD	M	6-3½x4¾		80-2400	80-2400	326.0	5.70	225-900	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
51	Buda 6HPM-326-MHD	M	6-3½x4¾			70-1800	326.0	5.70	225-900	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
52	Buda 6HPM-326-HD	M	6-3½x4¾			56-1200	326.0	5.70	217-900	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
53	Buda K-369	T,B	6-4⅛x4¾	39.6	99-2800	84-2800	369.0	4.73	200-1200	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
54	Buda K-393	T,B,Tr	6-4⅛x4¾	42.0	101-2400	86-2400	393.0	4.80	216-1200	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
55	Buda K-428	T,B,Tr	6-4⅜x4¾	45.9	107-2400	91-2400	428.0	5.33	240-1200	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
56	Buda 6KM-428-MD	M	6-4⅜x4¾		110-2400	110-2400	428.0	5.50	299-1200	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
57	Buda 6KM-428-MHD	M	6-4⅜x4¾			96-1800	428.0	5.50	299-1200	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
58	Buda 6KM-428-HD	M	6-4⅜x4¾			60-1200	428.0	5.50	278-900	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
59	Buda L-525	T,B,Tr	6-4½x5½	48.6	110-2400	94-2400	525.0	4.75	287-800	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
60	Buda LO-525	T,B,Tr	6-4½x5½	48.6	135-2400	115-2400	525.0	5.00	330-1100	N	In	I	2112	1.96	1.68	1.75	1.50	.468	.468	.372	.372
61	Buda GF-638	T,B,Tr	6-4¾x6	54.1	134-2000	114-2000	638.0	4.75	347-1100	N	Se	L	2112	2.50	2.37	2.25	2.12	.375	.375	.434	.434
62	Buda M-766	T,B,Tr	6-5x6¼	60.0	155-1800	132-1800	765.8	5.00	425-1000	N	In	I	2112	2.39	2.14	2.12	1.87	.540	.540	.435	.435
63	Buda JV-6	Tr,Ind	6-5⅜x7¼	79.3	142-1200	121-1200	1129.5	3.88	592-600	N	Se	L	Sil	2.75	2.78	2.50	2.50	.438	.438	.497	.497
64	Buda JK-6	Tr,Ind	6-6x7¼	86.4	188-1400	160-1400	1230.0	4.70	690-700	N	Se	L	2112	2.93	2.93	2.50	2.50	.438	.438	.497	.497
65	Buda JL-1335	Tr,Ind	6-6¼x7¼	93.7	164-1000	140-1000	1334.6	4.40	780-600	N	Se	L	2112	2.93	2.93	2.50	2.50	.438	.438	.497	.497
66	Buda P-1879	Ind	6-6¾x8¾	109.0	232-1000	197-1000	1879.0	4.50	1110-750	W	In	I	2112	2.71	2.53	2.50	2.28	.703	.703	.558	.558
67	Buda PHG-1879	Ind	6-6¾x8¾	109.0	232-1000	197-1000	1879.0		1110-752	W	In	I	2112	2.71	2.53	2.50	2.28	.703	.703	.558	.558
68	Buffalo BA	M,Ind	4-3½x5		45-1800	40-1800	192.0	5.00	131-1400	N	In	L	NCI	1.93	1.93	1.75	1.75	.312	.375	.375	.375
69	Buffalo RA-4	M,Ind	4-5⅞x7		120-1200	110-1200	759.0	4.60	525-1200	N	Se	I	Sil	3.09	2.84	2.87	2.62	.540	.540	.500	.500
70	Buffalo RAB-4	M,Ind	4-6⅛x7		145-1200	130-1200	929.0	5.00	635-1200	N	Se	I	Sil	3.09	2.84	2.87	2.62	.625	.540	.500	.500
71	Buffalo ATT-4	M,Ind	4-8¼x9		275-1200	250-1200	1925.0	4.50	1176-900	N	Se	L	Sil	4.12	4.06	3.62	3.44	.812	.812	.683	.683
72	Buffalo RA-6	M,Ind	6-5⅞x7		180-1200	160-1200	1138.0	4.60	790-1200	N	Se	I	Sil	3.09	2.84	2.87	2.62	.540	.540	.500	.500
73	Buffalo RAB-6	M,Ind	6-6⅛x7		215-1200	195-1200	1393.0	5.00	955-1200	N	Se	I	Sil	3.09	2.84	2.87	2.62	.625	.540	.500	.500
74	Buffalo ATT-6	M,Ind	6-8¼x9		425-1200	375-1200	2887.0	4.50	1764-900	N	Se	L	Sil	4.12	4.06	3.62	3.44	.812	.812	.683	.683
75	Buffalo RA-8	M,Ind	8-5⅞x7		240-1200	220-1200	1518.0	4.60	1050-1200	N	Se	I	Sil	3.09	2.84	2.87	2.62	.540	.540	.500	.500
76	Buffalo RAB-8	M,Ind	8-6⅛x7		300-1200	270-1200	1858.0	5.00	1275-1200	N	Se	I	Sil	3.09	2.84	2.87	2.62	.625	.540	.500	.500
77	Buffalo ATT-8	M,Ind	8-8¼x9		550-1200	500-1200	3849.0	4.50	2352-900	N	Se	L	Sil	4.12	4.06	3.62	3.44	.812	.812	.683	.683
78	Chevrolet 1941	C,T,B	6-3½x3¾	29.4	90-3300	81-3100	216.5	6.50	174-1600	N	In	I	Sil	1.64	1.46	1.25	1.20	.199	.211	.341	.340
79	Chevrolet 1941	T,B	6-3⅝x3 11/16	30.4	93-3100	83-3000	235.5	6.62	192-1450	N	In	I	Sil	1.64	1.46	1.25	1.20	.199	.211	.341	.340
80	Chris-Craft *B	M	4-3¼x4			60-3200	132.7	7.50	108-2400	N	In	L	CNS	1.50	1.37	1.25	1.12	.312	.312	.310	.310
81	Chris-Craft *K	M	6-3⅞x4⅛			95-3200	229.7	7.35	173-1800	N	In	L	CNS	1.60	1.39	1.46	1.25	.312	.312	.310	.310
82	Chris-Craft *M	M	6-4x4¼			130-3000	320.4	8.15	239-2400	N	In	L	Sil	1.87	1.78	1.71	1.56	.356	.356	.372	.372
83	Chris-Craft *W	M	6-4¼x4¾			160-3000	404.3	6.40	322-1500	N	In	L	CNS	2.06	1.87	1.81	1.62	.388	.388	.372	.372
84	Chris-Craft *A-120	M	8-5x5¼			275-2300	824.7	6.00	679-1380	N	Se	L	Sil	2.53	2.53	2.31	2.31	.375	.375	.434	.434
85	Chrysler Ace-PC	M	6-3⅛x4⅜			85-3200	201.3	6.70	162-1600	N	In	L	Sil	1.46	1.46	1.25	1.25	.375	.375	.340	.340
86	Chrysler Crown-M2	M	6-3⅝x4½			110-3200	241.6	6.50	195-2000	N	In	L	Sil	1.65	1.53	1.37	1.31	.375	.375	.340	.340
87	Chrysler Royal-M3	M	8-3¼x4⅞			143-3200	323.5	6.50	256-2200	N	In	L	Sil	1.53	1.35	1.37	1.20	.375	.375	.340	.340
88	Climax G4C	Ind	4-4½x5¼	34.2	46-1200	44-1200	334.0	4.75	218-800	W	In	I	Sil	2.00	2.00	1.75	1.75	.406	.406	.375	.375
89	Climax H4B	Ind	4-5¼x6¼	42.0	73-1200	68-1200	516.0	4.10	345-800	W	In	I	Sil	2.37	2.37	2.12	2.12	.437	.437	.437	.437
90	Climax N4B	Ind	4-5¾x6½	52.9	102-1200	90-1200	675.0	4.30	490-700	N	In	I	Sil	2.50	2.50	2.25	2.25	.500	.500	.562	.562
91	Climax R4U	Ind	4-6x7	57.6	100-1200	88-1200	791.6	4.40	475-750	N	Se	L	Sil	2.75	2.75	2.50	2.50	.375	.375	.625	.625
92	Climax R4I	Ind	4-6x7	57.6	123-1200	112-1200	791.6	4.70	580-750	N	Se	L	Sil	2.50	2.50	2.25	2.25	.500	.500	.562	.562
93	Climax R6U	Ind	6-6x7	86.4	142-1200	126-1200	1187.4	4.40	700-650	N	Se	L	Sil	2.75	2.75	2.50	2.50	.375	.375	.625	.625
94	Climax R6I	Ind	6-6x7	86.4	183-1200	165-1200	1187.4	4.70	890-700	N	Se	I	CNS	2.50	2.50	2.25	2.25	.500	.500	.562	.562
95	Climax R8I	Ind	8-6x7	115.2	245-1200	221-1200	1583.2	4.70	1160-750	N	Se	I	Sil	2.50	2.50	2.25	2.25	.500	.500	.562	.562
96	Continental Y-4069	C,Tr,Ind	4-2½x3½	10.0	26-3300	23-3300	68.7	6.15	49-1500	N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.314	.313
97	Continental Y-4091	C,Tr,Ind	4-2⅞x3½	13.2	34-3300	31-3300	90.9	6.00	66-1700	N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.314	.313
98	Continental Y-4112	C,Tr,Ind	4-3 1/16x3½	16.2	41-3300	37-3300	111.7	6.00	84-1500	N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.314	.313

(For abbreviations see pages 250-251)

Gasoline Engines

VALVES				PISTONS			CONNECTING RODS			CRANKSHAFT								CARBURETOR			OVERALL DIMENSIONS (In.)			
Seats												Crank-Pin	MAIN BEARINGS											
													Diameter and Length (In.)											
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Front End Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Diameter and Length (In.)	Number	Front	Rear	Oil Pressure to—	Spark Plug—Thread Size	Make	Size	Engine Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Line Number
45	N		HG	CI	39	.813x2.87	3	1040	6½	29	1045	N	1.93x1.22	3	2.25x1.62	2.25x1.50	aceg	14 mm	Zen	⅞	360	16⅜	31⅝	27	1
45	E	TA	HG	CI	67	.989x3.50	4	1040	7½	42	1045	N	2.37x1.54	3	2.43x1.62	2.50x1.75	abcdeg	14 mm	Zen	1	520	23	31⅝	33½	2
30	E	TA	HG	CI	92	1.31x4.06	5	1040	9½	92	1045	N	2.37x2.37	3	2.50x2.31	2.50x2.75	abcdeg	⅞–18	Zen	1¼	985	26	37½	43¾	3
45	E	TA	HG	CI	162	1.50x4.87	4	1040	13	182	1045	N	2.75x3.24	3	3.00x3.50	3.00x4.75	abcdeg	⅞–18	Zen	1½	2020	27	44⅞	53	4
45	E	TA	HG	CI	162	1.50x4.87	4	1040	13	182	1945	N	2.75x3.24	4	3.00x3.50	3.00x4.75	abcdeg	⅞–18	Zen(2)	1½	2810	29¾	63⅞	72½	5
(h)	E	71360	HG	AI	36	1.12x3.06	4	2340	10⅛	65	1050	N	3.25x–.–	7	3.25x1.87	3.25x2.60	abcde	18 mm	Zen	1¼	1165	27½	41	45	6
45	E	71360	HG	AI	43	1.12x3.28	4	2340	10⅛	65	1050	N	3.25x–.–	7	3.25x1.87	3.25x2.60	abcde	18 mm	Zen	1¼		27½	41	45	7
45	E	71360	HG	AI	47	1.12x3.34	4	2340	10¼	78	1050	N	3.25x–.–	7	3.25x1.87	3.25x2.87	abcde	18 mm	Str	1¾	1320	27½	36¾	44	8
45	E	71360	HG	AI	51	1.12x–.–	4	2340	10¼	78	1050	N	3.25x–.–	7	3.25x1.87	3.25x2.87	abcde	18 mm	Str	1¾	1320	27½	41½	47	9
45	E	71360	HG	AI	57	1.12x–.–	4	2340	10¼	78	1050	N	3.25x–.–	7	3.25x1.87	3.25x2.87	abcde	18 mm	Str	1¾	1330	27½	41½	47	10
45	N		HG	AI	6	.625x1.87	3	1045	5¾	14	1045	N	1.31x1.25	2	2.50x1.50	2.50x1.50	abcde	14 mm	Til		160	12¾	17⅝	29	11
45	N		HG	AI	6	.625x2.00	3	1045	5¾	14	1045	Y	1.31x1.25	3	2.50x1.50	2.50x1.50	abcde	14 mm	Zen	⅝	128	12¾	17⅝	18¾	12
45	N		HG	AI	6	.625x2.00	3	1045	5¾	14	1045	N	1.31x1.25	3	2.50x1.50	2.50x1.50	abcde		Zen	½	165	12¾	17⅝	29	13
			HG	CI		1.17x4.00	4	AS	11		CNS	N	2.56x2.00	3	2.12x4.25	2.12x2.25	abcd		Str	1¼	650	12⅞	19½	53¼	14
45	N		HG	SS	80	1.17x4.00	4	1045	11	64	1045	N	2.50x2.50	3	2.50x4.25	2.50x3.50	abcde		Str	1¼	600	21	29¾	37⅛	15
45	N		HG	SS	72	1.17x4.00	5	1045	11	64	1045	N	2.50x2.50	3	2.50x4.25	2.50x3.50	abcder		Str	1¼	950	16	18	53	16
45	N		HG	SS	64	1.17x3.87	4	CNS	11	65	CNS	N	2.50x2.00	3	2.75x4.50	2.75x3.00	abce		Str	1½	800	25¾	33¾	49	17
45	N		HG	SS	64	1.17x3.87	4	AS			CNS	N	2.50x2.00	3	2.75x4.50	2.75x3.00	abcdeg		Str	1½	800	19¾	24¾	65	18
45	N		HG	SS	76	1.25x3.87	5	CNS	11	65	CNS	N	2.50x2.00	3	2.75x4.50	2.75x3.00	abce		Str	1½	875	25¾	33¾	49	19
45	N		HG	SS	70	1.25x3.87	5	AS	11	65	CNS	N	2.50x2.00	3	2.75x4.50	2.75x4.50	abcdeg		Str	1½	900	19¾	24¾	65	20
45	N		BG	SS	72	1.37x4.00	5	AS	12	80	CNS	Y	2.62x2.67	7	2.62x5.00	2.62x3.50	abcd		Str	1¾	1450	20	30	74	21
45	N		SG	CI		.750x3.37	3	DFS				Y	1.37x1.50	2	1.37x2.50	1.37x2.50	Splash	⅞–18		1	204	13	24	30	22
45	N		SG	CI	124	1.25x5.25	5	DFS	12½	136		N	2.00x3.00	2	2.00x5.50	2.00x5.50	Splash	⅞–18		1¼	510	20	34	47	23
45	N		HG	CI		.750x3.37		DFS				Y	1.37x1.50	2	1.37x2.50	1.37x2.50	Splash	⅞–18		1¼	308	13	25	33	24
45	N		HG	CI	124	1.25x5.25	5	DFS	12½	136		N	2.00x3.00	3	2.00x5.50	2.00x5.50	ML	⅞–18		1¼	1010	20	35	56	25
45	N		SG	CI	272	1.50x6.00	5	DFS	15½	208		N	2.37x3.00	5	2.37x6.00	2.37x6.00	ML	⅞–18		1½		21	40	63	26
45	N		HG	CI	272	1.50x6.00	5	DFS	15½	208		N	2.37x3.00	4	2.37x6.00	2.37x6.00	ML	⅞–18		1½	2000	21	40	77	27
45	N		HG	CI		.625x2.37	3	DFS			DFS	N	1.50x1.75	3	1.50x2.75	1.50x2.75	ab	⅞–18		1¼	382	17	22	35	28
45	Bo	AS	HG	CI	64	1.37x3.50	4	DFS	9½	56		N	2.00x2.25	3	2.00x3.00	2.00x3.25	abcde	⅞–18		1¼	920	17	28½	53	29
45	N		HG	CI	124	1.25x5.25	5	DFS	12½	136		N	2.00x3.00	5	2.00x5.50	2.00x5.50	ML	⅞–18		1½	1700	20	35	76	30
45	N		HG	CI	272	1.50x6.00	5	DFS	15½	208		N	2.37x3.00	5	2.37x6.00	2.37x6.00	ML	⅞–18		1½	2400	21	40	87	31
45	Bo	AS	HG	CI	64	1.25x3.50	4	DFS	9⅜	56		N	2.50x1.75	7	3.00x2.00	3.00x3.00	abcde	⅞–18		1½	1500	18	30	64	32
45	N		HG	SS	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1¼	590	26	29⅛	31⅛	33
45	N		HG	CI	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1¼	590	25¾	31⅛	38¾	34
45	N		HG	SS	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1¼	770	23¼	31⅛	43⅜	35
45	N		HG	SS	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1¼	770	23¼	31⅛	43⅜	36
45	N		HG	SS	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1¼	770	23¼	31⅛	43⅜	37
45	N		HG	SS	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcde	18 mm	Str	1¼	770	23¼	31⅛	43⅜	38
45	N		HG	CI	65	1.50x3.31	4	CS	11¼	89	CS	N	2.00x2.25	3	1.87x2.87	2.12x3.44	abcde	⅞–18	Zen	1¼	875	25¾	33¼	40⅛	39
45	E	JM	HG	CI	111	1.43x4.11	4	AS	13¼	106	CS	N	2.50x2.87	3	2.50x3.00	2.50x4.50	abcde	⅞–18	Zen	1½	1087	25¾	36⅛	47½	40
45	E	DC	HG	CI	142	1.37x4.37	4	AS	14⅝	163	CS	N	2.50x3.12	3	2.25x4.12	2.62x4.69	abcde	⅞–18	Zen	1½	1409	28¾	40⅛	52⅞	41
45	E	DC	HG	CI	144	1.37x4.87	4	AS	14⅝	163	CS	N	2.50x3.12	3	2.25x4.12	2.62x4.69	abcde	⅞–18	Zen	1½	1430	28¾	40⅛	52⅞	42
45	E	JM	HG	CI	172	2.00x4.87	4	AS	14⅝	252	CS	N	3.00x3.31	3	3.00x4.75	3.00x4.75	abcde	⅞–18	Zen	1¾	1925	30	47⅛	58½	43
30	E	DC	HG	CI	172	2.00x5.12	4	AS	14⅝	252	CS	N	3.00x3.31	3	3.00x4.75	3.00x4.75	abcde	⅞–18	Zen	1¾	1925	30	44⅛	58½	44
30	E	DC	HG	CI	199	2.00x5.33	4	AS	14⅝	227	CS	N	3.00x3.31	3	3.00x4.75	3.00x4.75	abcde	⅞–18	Zen	1¾	1925	30	40⅛	58½	45
45	N		HG	CI	37	1.12x2.97	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1½	825	25¾	33⅛	39⅛	46
45	N		HG	CI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1½	825	25¾	33⅛	39⅛	47
45	N		HG	AI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1½	825	25¾	33⅛	39⅛	48
45	N		HG	AI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1½	825	25¾	33⅛	39⅛	49
45	N		HG	AI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1½	1010	22⅝	28⅛	54½	50
45	N		HG	AI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1½	1010	22⅝	28⅛	54½	51
45	N		HG	AI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1½	1010	22⅝	28⅛	54½	52
45	N		HG	CI	63	1.25x3.47	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcde	18 mm	Zen	1¾	900	25¾	30⅛	47⅞	53
45	N		HG	CI	66	1.25x3.47	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcde	18 mm	Zen	1¾	905	25¾	30⅛	47⅞	54
45	N		HG	AI	68	1.25x3.82	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcde	18 mm	Zen	1¾	905	25¾	30⅛	47⅞	55
45	N		HG	CI	68	1.25x3.82	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcder	18 mm	Str	1¾	1320	24½	29½	60⅛	56
45	N		HG	CI	68	1.25x3.82	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcder	18 mm	Str	1¾	1320	24½	29½	60⅛	57
45	N		HG	CI	68	1.25x3.82	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcder	18 mm	Str	1¾	1320	24½	29½	60⅛	58
45	E	DC	HG	CI	88	1.25x3.81	4	CS	11	66	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcde	18 mm	Zen	1¾	950	25¾	33⅞	47⅞	59
30	E	JM	HG	AI	88	1.25x3.81	5	AS	11	78	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcdeg	14 mm	Zen	1¾	1195	27⅛	38½	49⅝	60
30	E	DC	HG	AI	94	1.62x4.00	4	AS	13¼	139	CS	N	3.00x2.25	4	3.00x2.25	3.00x3.69	abcde	18 mm	Zen	1¾	1525	28¾	43½	53⅛	61
30	E	DC	HG	AI	127	1.75x4.15	5	AS	12½	164	CS	N	3.24x2.12	7	3.50x3.00	3.50x3.00	abcdeg	18 mm	Zen	1¾	2150	31½	49⅛	57½	62
45	E	JM	HG	CI	172	2.00x4.87	4	AS	15¼	239	CS	Y	3.50x3.31	4	3.50x4.75	3.50x4.75	abcde	⅞–18	Zen	2	3700	28⅝	43	74⅛	63
30	E	DC	HG	CI	196	2.00x5.12	4	AS	15¼	239	CS	Y	3.50x3.31	4	3.50x4.75	3.50x4.75	abcde	⅞–18	Zen	2	3700	28⅝	43	74⅛	64
45	E	DC	HG	CI	199	2.00x5.33	4	AS	15¼	239	CS	Y	3.50x3.31	4	3.50x4.75	3.50x4.75	abcde	⅞–18	Zen	2	3700	28⅝	43	74⅛	65
45	E	DC	HG	Ala	263	2.75x5.53	5	CS	17¾	430	CS	Y	3.75x3.50	7	3.75x2.31	3.75x3.48	abcdeg	18 mm	Zen(2)	2	9000	48	68⅛	86⅛	66
45	E	DC	HG	Ala	263	2.75x5.53	5	CS	17¾	430	CS	Y	3.75x3.50	7	3.75x2.31	3.75x3.48	abcdeg	18 mm	Zen(2)	2	9000	48	68⅛	85½	67
45	N		HG	CI	37	1.09x3.31	3	1045	10¼	50	1045	N	1.87x2.12	3	2.25x3.00	2.18x2.87	Splash	⅞–18	Zen	1	720	22	28	53	68
45	E	SA	HG	AI	132	1.50x5.62	5	3135	14	147	3140	Y	3.00x2.37	5	3.75x4.12	3.75x4.50	abce	⅞–18	Zen	2½	2500	24	46	78	69
45	E	SA	HG	AI	154	1.68x6.25	5	3135	14	147	3140	Y	3.00x2.37	5	3.75x4.12	3.75x4.50	abe	⅞–18	Zen	2½	2700	24	46	78	70
45	E	SA	HG	AI	312	2.25x7.62	5	3135	21	186	3140	Y	4.25x4.00	5	5.00x7.00	5.00x7.00	abce	14 mm	Zen(2)	2½	7000	47	54	132	71
45	E	SA	HG	AI	132	1.50x5.62	5	3135	14	147	3140	Y	3.00x2.37	7	3.75x4.12	3.75x4.50	abe	⅞–18	Zen(2)	2	3000	24	46	94	72
45	E	SA	HG	AI	154	1.68x6.25	5	3135	14	147	3140	Y	3.00x2.37	7	3.75x4.12	3.75x4.50	abe	⅞–18	Zen(2)	2	3200	24	46	94	73
45	E	SA	HG	AI	312	2.25x7.62	5	3135	21	186	3140	Y	4.25x4.00	7	5.00x7.00	5.00x7.00	abce	14 mm	Zen(3)	2½	11600	47	54	160	74
45	E	SA	HG	AI	132	1.50x5.62	5	3135	14	147	3140	Y	3.00x2.37	9	3.75x4.12	3.75x4.50	abe	⅞–18	Zen(2)	2½	4000	24	46	111	75
45	E	SA	HG	AI	154	1.68x6.25	5	3135	14	147	3140	Y	3.00x2.37	9	3.75x4.12	3.75x4.50	abe	⅞–18	Zen(2)	2½	4300	24	46	111	76
45	E	SA	HG	AI	312	2.25x7.62	5	3135	21	186	3140	Y	4.25x4.00	9	5.00x7.00	5.00x7.00	abce	14 mm	Zen(4)	2½	15000	47	54	188	77
30	N		HG	CI		.864x3.15	3	DFS	6¹³⁄₁₆	31	DFS	Y	2.31x1.50	4	2.68x1.18	2.78x1.62	abcg	10 mm	Car	1¼					78
30	N		HG	CI		.864x3.15	3	DFS	6¹³⁄₁₆	31	DFS	Y	2.31x1.50	4	2.68x1.18	2.78x1.62	abcg	10 mm	Car	1¼					79
30	N		HG	AI	21	.750x2.87	3	3140	6⅞	22	1045	N	1.75x1.12	3	1.98x1.62	1.98x1.62	abr	14 mm	Zen	1¼	458*	24⅛	23⅛	31¹¹⁄₁₆	80
30	N		HG	AI	25	.875x2.87	4	1035	7	29	1045	N	1.98x1.12	7	2.49x1.93	2.49x1.37	abr**	14 mm	Zen	1⅜	628*	24⅛	25½	40	81
30	N		HG	AI	36	1.00x3.50	4	1040	8	40	1045	N	1.98x1.50	7	2.49x2.12	2.49x1.37	abr	14 mm	Zen	1¾	850*	24⅛	27⅜	46⅛	82
30	N		HG	AI	44	1.12x3.68	4	3140	8⅞	52	1045	Y	2.24x1.50	7	2.62x2.75	2.62x1.75	aber	14 mm	Zen	2	1224*	26⅛	31	53⅛	83
45	N		HG	AI	77	1.37x4.25	4	1045	11¼	91	1045	Y	3.00x2.03	3	2.99x3.25	2.99x3.25	abcfr	18 mm	Hol	2	1550*	34	41	62½	84
45	E	CNT	HG	AI	20	.859x2.62	4	T-1335	7¹³⁄₁₆	31	1040	Y	1.93x1.25	4	2.25x1.23	2.25x1.87	abce	18 mm	Zen	1¼	665				85
45	E	CNT	HG	AI	25	.859x2.87	4	T-1335	7⅞	34	1040	Y	2.18x1.37	4	2.50x1.31	2.50x1.87	abce	18 mm	Zen	1½	785				86
45	E	CNT	HG	AI	23	.859x2.75	4	T-1335	9	36	1040	Y	2.18x1.37	5	2.70x1.65	2.70x1.09	abce	18 mm	Zen(2)	1½	990				87
45	E	CI	HG	CI	85	1.31x4.06	4	1045	10½	167	1045	N	2.37x2.12	3	2.37x2.31	2.37x2.75	abcdeg	⅞–18	Zen	1¼	825	25¾	37	41¼	88
45	E	CI	HG	CI	142	1.50x4.31	4	1045	11¾	139	1045	N	2.75x2.50	3	3.00x2.87	3.00x3.62	abcdeg	⅞–18	Zen	1½	1350	28¾	43	47¾	89
45	E	CI	HG	CI	189	1.48x5.25	4	1035	14	194	1045	N	3.00x3.00	3	3.25x3.50	3.25x4.75	abceg	⅞–18	Zen	1¾	1800	30½	46	53¼	90
45	N		HG	CI	210	1.49x5.37	4	3135	16	244	4140	N	3.00x3.50	3	3.25x3.81	3.25x4.50	abce	⅞–18	Zen	2	2000	31⅛	46¼	57⅛	91
45	E	CI	HG	AI	153	1.49x5.37	4	3135	16	244	4140	N	3.00x3.50	3	3.25x3.81	3.25x4.50	abceg	⅞–18	Zen	2	2300	31⅛	49½	57⅛	92
45	N		HG	CI	210	1.49x5.37	4	3135	16	244	4140	Y	3.00x3.50	4	3.25x3.81	3.25x4.50	abce	⅞–18	Zen	2	2660	29⅛	46⅞	73⅛	93
45	E	CI	HG	AI	153	1.49x5.37	4	3135	16	244	4140	Y	3.00x3.50	4	3.25x3.81	3.25x4.50	abceg	⅞–18	Zen(2)	1¾	3200	29⅛	51⅜	73⅛	94
45	E	CI	HG	AI	153	1.49x5.37	4	3135	16	244	4140	N	3.37x3.18	5	4.00x3.62	4.00x4.50	abceg	⅞–18	Zen(2)	2	4500	35⅛	56⅛	97⅛	95
(h)	N		HG	CT		.703x2.06	3	1030	5¾		1045	N	1.50x1.18	3	1.75x1.37	1.75x1.78	abcet	18 mm		⅞	298	26	22⅛	25½	96
(h)	N		HG	CT		.703x2.44	3	1030	5¾		1045	N	1.50x1.18	3	1.75x1.37	1.75x1.78	abcet	18 mm		1	305	26	22⅛	25½	97
(h)	N		HG	CT		.703x2.75	3	1030	5¾		1045	N	1.50x1.18	3	1.75x1.28	1.75x1.65	abcet	18 mm			315	26	22⅛	25½	98

(For abbreviations see pages 250-251)

American Gasoline

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	Rated or Tax Hp.	MAXIMUM BRAKE Hp.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.)	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
					With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
														Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Continental F-4124	C,T,Tr,Ind	4-3x4⅜	14.4	47-3300	42-3300	123.7	6.00	94-1600	N	In	L	Sil	1.51	1.32	1.37	1.18	.281	.280	.341	.339
2	Continental F-4140	C,T,Tr,Ind	4-3⅛x4⅜	16.2	52-3200	47-3200	139.6	6.00	106-1600	N	In	L	Sil	1.51	1.32	1.37	1.18	.281	.280	.341	.339
3	Continental F-4162	C,T,Tr,Ind	4-3 1/16x4⅜	18.9	58-3300	52-3300	162.4	5.75	122-1600	N	In	L	Sil	1.51	1.32	1.37	1.18	.281	.280	.341	.339
4	Continental F-6170	C,T,Tr,Ind	6-3x4	21.6	65-3460	58-3460	169.6	6.60	124-1200	N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.341	.339
5	Continental F-6199	C,T,Tr,Ind	6-3¼x4	25.4	68-3300	61-3300	199.1	6.00	150-1200	N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.341	.339
6	Continental F-6209	C,T,Tr,Ind	6-3⅛x4⅜	24.3	71-3100	64-3100	209.5	5.75	154-1200	N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.341	.339
7	Continental F-6218	C,T,Tr,Ind	6-3¼x4⅜	25.4	73-3100	66-3100	217.8	5.95	162-1200	N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.341	.339
8	Continental A-6244	C,T,B,Ind	6-3 1/16x4⅜	28.4	80-3000	72-3000	243.6	6.02	180-1000	N	In	L	St	1.57	1.32	1.43	1.18	.291	.291	.373	.372
9	Continental M-6271	T,B,Tr,Ind	6-3⅝x4⅜	31.5	85-2800	76-2800	270.9	5.75	190-1200	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.404	.402
10	Continental M-6290	T,B,Tr,Ind	6-3¾x4⅜	33.7	88-2750	79-2750	289.9	5.70	205-1200	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.404	.402
11	Continental M-6330	T,B,Tr,Ind	6-4x4⅜	38.4	98-2700	88-2700	329.8	5.50	233-1200	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.404	.402
12	Continental B-6371	T,B,Ind	6-4⅛x4⅝	40.8	100-2650	91-2650	370.9	5.74	280-1000	N	In	L	St	1.89	1.64	1.75	1.50	.354	.354	.435	.432
13	Continental B-6405	T,B,Ind	6-4⅛x4⅝	44.6	112-2600	101-2600	405.3	5.74	304-1000	N	In	L	St	1.89	1.64	1.75	1.50	.354	.354	.435	.432
14	Continental 20R	T,B,Ind	6-4¼x4¾	40.8	106-2600	95-2600	380.9	4.76	276-1200	N	In	I	AUS	2.06	1.87	1.81	1.62	.420	.420	.435	.433
15	Continental 21R	T,B,Ind	6-4⅜x4¾	45.9	118-2500	106-2500	428.4	4.63	308-1200	N	In	I	AUS	2.06	1.87	1.81	1.62	.420	.420	.435	.433
16	Continental 22R	T,B,Ind	6-4½x5¼	48.6	138-2400	124-2400	501.0	4.50	364-1200	N	In	I	AUS	2.06	1.87	1.81	1.62	.420	.420	.435	.433
17	Dodge T-112	T	6-3¼x4⅜	23.4	82-3000	74-3000	201.3	6.70	160-1200	N	In	L	Sil	1.46	1.46	1.31	1.31	.379	.379	.340	.340
18	Dodge T-114, 116	T	6-3¼x4⅜	25.3	85-3000	77-3000	217.7	6.50	170-1200	N	In	L	Sil	1.46	1.46	1.31	1.31	.379	.379	.340	.340
19	Dodge T-118	T	6-3⅜x4½	27.3	92-3000	81-3000	228.1	6.50	176-1200	N	In	L	Sil	1.65	1.53	1.50	1.37	.379	.379	.340	.340
20	Dodge T-120	T	6-3⅜x4½	27.3	99-3000		241.5	6.50	188-1200	N	In	L	Sil	1.65	1.53	1.50	1.37	.379	.379	.340	.340
21	Dodge T-124	T	6-3¾x5	33.7	106-2800	97-2800	331.3	5.85	240-800	N	In	L	Sil	1.93	1.75	1.78	1.59	.323	.323	.371	.371
22	Elco F-42	M	4-5x6			89-1600	471.0	5.00	325-1050	W	Se	F	Sil	2.50	2.50	2.25	2.25	.303	.350	.437	.437
23	Elco F-62	M	6-5x6			144-1600	707.0	5.00	490-1050	W	Se	F	Sil	2.50	2.50	2.25	2.25	.303	.350	.437	.437
24	Ford 30HP	C, T	4-3 7/16x3¾	16.2		30-2800†	119.5	6.00	85-1000	D	In	L	CNS	1.54	1.26			.307	.307	.311	.311
25	Ford 85HP	C, T, B	8-3 1/16x3¾	30.0		85-3800†	221.0	(1)	(5)	D	In	L	CNS	1.54	1.54			.292	.292	.311	.311
26	Ford 95HP	C, T, B	8-3 7/16x3¾	32.5		95-3600†	239.0	6.15	176-2100	D	In	L	CNS	1.54	1.54			.292	.292	.311	.311
27	Franklin 4CHO-150	T, Tr	4-3⅝x3⅝			43-3000	150.0	5.50	100-1200	N	Se	I	CNS	1.66	1.51	1.50	1.40	.375	.375	.375	.375
28	Franklin 4CHO-176	T, Ind	4-4x3½		60-2500	55-2500	176.0	6.00	132-1600	N	Se	I	CNS	1.93	1.50	1.68	1.34	.375	.375	.375	.375
29	Franklin 6AH-377	T,B,Tr,Ind	6-4x5	38.4		104-2500	377.0	4.90	250-1500		Se	I	CNS	1.75	1.43	1.62	1.31	.375	.375	.375	.375
30	Franklin 6A-377	T,B,Tr,Ind	6-4x5	38.4		104-2500	377.0	4.90	250-1500		Se	I	CNS	1.75	1.43	1.62	1.31	.375	.375	.375	.375
31	Franklin 6AH-400	T,B,Tr,Ind	6-4⅛x5	40.8		110-2500	400.0	5.00	268-1500		Se	I	CNS	1.75	1.43	1.62	1.31	.375	.375	.375	.375
32	Franklin 6A-400	T,B,Tr,Ind	6-4⅛x5	40.8		110-2500	400.0	5.00	268-1500		Se	I	CNS	1.75	1.43	1.62	1.31	.375	.375	.375	.375
33	G. M. C. 228	T, B	6-3 3/16x3 13/16	30.4	87-3000	79-3000	228.0	6.75	178-1000	N	In	I	Sil	1.64	1.47	1.25	1.16	.289	.307	.343	.343
34	G. M. C. 248	T, B	6-3 3/16x3 13/16	33.1	97-3200	86-3000	248.5	6.75	195-1200	N	In	I	Sil	1.64	1.47	1.25	1.16	.289	.307	.343	.343
35	G. M. C. 270	T	6-3 3/16x4	34.3	99-3000	87-3000	270.0	6.75	221-1000	N	In	I	Sil	1.64	1.47	1.25	1.16	.289	.307	.343	.343
36	G. M. C. 278	T	6-3⅝x4½	31.5	100-3000	86-2800	278.6	6.00	223-1200	N	Se	I	CHS	1.81	1.56	1.44	1.37	.333	.333	.375	.375
37	G. M. C. 308	T, B	6-3 13/16x4½	33.9	111-3000	87-2800	308.2	6.00	240-1200	N	Se	I	CHS	1.81	1.46	1.44	1.37	.333	.333	.375	.375
38	G. M. C. 361	T	6-4⅛x4½	40.8	122-2800	107-2800	360.8	6.00	278-800	N	Se	I	CHS	1.94	1.72	1.50	1.50	.406	.406	.375	.375
39	G. M. C. 426	T	6-4¼x5	43.3	145-2600	126-2600	425.6	6.00	340-1100	N	Se	I	CHS	1.94	1.72	1.50	1.50	.406	.406	.375	.375
40	G. M. C. 451	T, B	6-4⅜x5	45.9	149-2600	130-2300	450.9	6.00	368-1200	N	Se	I	CHS	1.94	1.72	1.50	1.50	.406	.406	.375	.375
41	G. M. C. 477	T, B	6-4½x5	48.6	153-2600	136-2600	477.1	6.00	385-1000	N	Se	I	CHS	1.94	1.72	1.50	1.50	.406	.406	.375	.375
42	G. M. C. 529	B	6-4⅝x5¼	51.3	158-2500	144-2500	529.2	5.50	405-1200	N	Se	I	CHS	2.12	1.94	1.66	1.62	.406	.406	.437	.437
43	G. M. C. 707	B	6-5x6	60.0	175-2200	160-2100	706.8	4.83	540-1200	D	Se	I	CHS	2.44	2.17	1.75	1.75	.413	.413	.437	.500
44	Gray Light Four	M	4-2 1/16x3½			16-1800	69.0	5.50		N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.314	.312
45	Gray Sea Scout	M	4-2 7/16x3½			37-3000	91.0	6.50		N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.314	.312
46	Gray Phantom 4-45	M	4-2 7/16x3½			45-3600	91.0	7.50		N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.314	.312
47	Gray Racing-91	M	4-2 7/16x3½			65-5000	91.0	9.20		N	In	L	Sil	1.32	1.23	1.16	1.07	.284	.284	.314	.312
48	Gray Racing-100	M	4-2 9/16x3⅝			75-5000	98.0	10.00		N	In	L	Sil	1.32	1.23	1.16	1.07	.284	.284	.314	.312
49	Gray Four-22	M	4-3 1/16x3½			45-3000	112.0	6.50		N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.314	.312
50	Gray Four-40	M	4-3⅛x4⅜			55-3000	140.0	5.50		N	In	L	Sil	1.51	1.32	1.37	1.18	.331	.331	.340	.338
51	Gray Phantom 4-62	M	4-3 1/16x4⅜			62-3600	140.0	7.20		N	In	L	Sil	1.51	1.32	1.37	1.18	.331	.331	.340	.338
52	Gray Four-52	M	4-3 1/16x4⅜			57-2600	162.0	6.00		N	In	L	Sil	1.51	1.32	1.37	1.18	.331	.331	.340	.338
53	Gray Phantom 4-75	M	4-3 1/16x4⅜			75-3600	162.0	7.00		N	In	L	Sil	1.51	1.32	1.37	1.18	.331	.331	.340	.338
54	Gray Phantom 4-86	M	4-3 1/16x4⅜			86-3600	162.0	8.00		N	In	L	Sil	1.51	1.32	1.37	1.18	.331	.331	.340	.338
55	Gray Six-51	M	6-3¼x4			73-3200	199.0	6.00		N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.314	.312
56	Gray Six-71	M	6-3¼x4⅜			84-3000	218.0	6.50		N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.314	.312
57	Gray Phantom 6-90	M	6-3¼x4⅜			90-3600	218.0	7.00		N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.314	.312
58	Gray Phantom 6-103	M	6-3¼x4⅜			103-3600	218.0	7.00		N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.314	.312
59	Gray Six-91	M	6-3 1/16x4⅜			100-3000	244.0	7.00		N	In	L	Sil	1.70	1.43	1.56	1.31	.375	.375	.372	.370
60	Gray Phantom 6-125	M	6-3 1/16x4⅜			125-3600	244.0	7.00		N	In	L	Sil	1.70	1.43	1.56	1.31	.375	.375	.372	.370
61	Gray Fireball 6-140	M	6-3 1/16x4⅜			140-4000	244.0	7.50		N	In	L	Sil	1.57	1.42	1.43	1.31	.311	.311	.339	.338
62	Gray Fireball 6-150	M	6-3 1/16x4⅜			150-4000	244.0	7.50		N	In	L	Sil	1.57	1.42	1.43	1.31	.311	.311	.339	.338
63	Gray Fireball 6-160	M	6-3 1/16x4⅜			160-4000	244.0	7.50		N	In	L	Sil	1.57	1.42	1.43	1.31	.311	.311	.339	.338
64	Gray Racing Fireball	M	6-3.30x4⅜			180-5000	225.0	10.00		N	In	L	Sil	1.71	1.58	1.56	1.43	.360	.360	.340	.371
65	Gray Six-101	M	6-3¾x4⅜			110-3200	290.0	6.50		N	In	L	Sil	1.78	1.51	1.62	1.37	.354	.354	.404	.402
66	Gray Six-121	M	6-4x4⅜			124-3200	330.0	6.50		N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.404	.402
67	Gray Super Six	M	6-4x4⅜			145-3200	330.0	6.50		N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.404	.402
68	Gray Six-105	M	6-4¼x4½			101-2400	383.0	5.50		N	In	L	Sil	2.06	1.87	1.81	1.62	.406	.406	.434	.432
69	Gray Eight-160	M	8-3⅝x4½			160-3200	372.0	6.25		N	In	L	Sil	1.56	1.42	1.50	1.37	.372	.372	.339	.338
70	Gray Phantom 8-175	M	8-3⅝x4½			175-3600	372.0	6.62		N	In	L	Sil	1.56	1.42	1.50	1.37	.372	.372	.339	.338
71	Hall-Scott 165	T, B, Ind	4-4¼x5½	28.9	72-2000	60-2000	312.0	4.80	212-1000	N	Se	I	AESW	2.13	2.25	1.93	1.89	.362	.362	.435	.435
72	Hall-Scott Fisher Jr. 178-179	M	4-4¼x5½			75-1800	312.0	4.00		N	Se	I	AESW	2.13	2.13	1.93	1.93	.362	.362	.435	.435
73	Hall-Scott 167	T, B, Ind	4-4¾x5½	36.1	80-2000	65-1800	390.0	4.84	265-1000	N	Se	I	AESW	2.25	2.38	2.06	2.03	.362	.362	.435	.435
74	Hall-Scott 147	T, B, FA	6-4x5	38.4	107-2200	93-2200	377.0	4.90	247-1000	N	Se	I	Sil	2.13	2.13	1.93	1.93	.362	.362	.435	.435
75	Hall-Scott 95	T, B	6-4x5	38.4	115-2800	95-2600	377.0	5.40	255-1000	W	In	I	AESW	2.03	1.91	1.87	1.65	.421	.421	.435	.435
76	Hall-Scott 160-1	T, B, FA	6-4¼x5½	43.3	118-2200	100-2200	468.0	4.90	310-1200	N	Se	I	AESW	2.13	2.13	1.93	1.93	.362	.362	.435	.435
77	Hall-Scott Navigator I, 116-117	M	6-4¼x5½			103-1800	468.0	4.70		N	Se	I	AESW	2.13	2.13	1.93	1.93	.362	.362	.435	.435
78	Hall-Scott 130	T, B, FA	6-4¼x5	43.3	130-3000	107-2800	425.6	4.96	278-1000	W	In	I	AESW	2.28	2.16	2.12	1.90	.421	.421	.435	.435
79	Hall-Scott Navigator II, 163-164	M	6-4¼x5½			107-2000	468.0	4.40		N	Se	I	AESW	2.25	2.38	2.06	2.06	.328	.328	.435	.435
80	Hall-Scott 160	T, B	6-4¼x5½	43.3	142-2300	117-2000	468.0	4.90	324-1200	N	Se	I	AESW	2.25	2.38	2.06	2.06	.328	.328	.435	.435
81	Hall-Scott 135	T, B, FA	6-4½x5	48.6	145-3000	122-2800	477.1	5.50	330-1200	W	In	I	AESW	2.28	2.16	2.12	1.90	421	.421	.435	.435
82	Hall-Scott 180	T, B, FA	6-5x6	60.0	200-2200	170-2100	706.8	5.30	500-1400	W	In	I	AESW	2.62	2.37	2.37	2.00	.482	.482	.497	.528
83	Hall-Scott 175-1	T, B, FA	6-5x6	60.0	204-2200	173-2000	706.8	5.00	525-1000	N	Se	I	AESW	2.50	2.50	2.31	2.31	.406	.343	.435	.435
84	Hall-Scott Explorer 132-33,157-58	M	6-5x7			190-1800	824.7	4.79		N	Se	I	AESW	2.73	2.73	2.50	2.50	.406	.406	.435	.435
85	Hall-Scott 176	T, B, FA	6-5¼x6	66.1	222-2200	191-1800	779.3	5.00	580-1100	N	Se	I	AESW	2.50	2.50	2.31	2.31	.406	.343	.435	.435
86	Hall-Scott 190	T,B,FA,RC	6-5¼x6	66.1	240-2200	200-2000	779.3	5.00	570-1200	W	In	I	AESW	2.62	2.37	2.37	2.00	.482	.482	.497	.528
87	Hall-Scott 177	T,B,FA,Ind	6-5½x6	72.6	243-2200	203-1800	855.2	5.00	710-1100	N	Se	I	AESW	2.50	2.50	2.31	2.31	.406	.343	.435	.435
88	Hall-Scott 230-31	M	6-5½x7			245-1800	997.8	4.90		N	In	I	AESW	2.73	2.73	2.50	2.50	.406	.406	.435	.435
89	Hall-Scott Invader 186-87	M	6-5½x7			252-2100	997.8	5.09		N	In	I	AESW	2.87	2.87	2.62	2.62	.482	.482	.497	.528
90	Hall-Scott Invader 168-69	M	6-5½x7			275-2100	997.8	5.09		N	In	I	AESW	2.87	2.87	2.62	2.62	.482	.482	.497	.528
91	Hall-Scott Defender 1268-69	M	12-5½x7			575-2100	1996.0	5.80		N	Se	I	AESW	2.87	2.75	2.62	2.50	.482	.482	.497	.528
92	Hall-Scott Defender 2286-87	M	12-5¾x7			605-2100	2181.0	7.00		N	Se	I	AESW	2.87	2.75	2.62	2.50	.482	.482	.497	.528
93	Hall-Scott Defender 2268-69	M	12-5¾x7			630-2100	2181.0	7.00		N	Se	I	AESW	2.87	2.75	2.62	2.50	.482	.482	.497	.528
94	Hall-Scott Defender 3368-69	M	12-5¾x7			900-2100	2181.0	6.00		N	Se	I	AESW	2.87	2.75	2.62	2.50	.482	.482	.497	.528
95	Hercules BXB	M, Tr, Ind	2-2⅞x3	6.6	10-2300	8-2300	39.0	6.00	28-1250	N	In	L	Sil	1.23	1.10	1.00	.875	.200	.200	.248	.248
96	Hercules NXA	M, Tr, Ind	2-3x4	7.2	13-2000	11-2000	56.5	5.50	39-1100	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.312	.310
97	Hercules NXB	M, Tr, Ind	2-3¼x4	8.9	16-2000	13-2000	66.3	5.50	46-1100	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.312	.312
98	Hercules ZXA	T,Tr,M,Ind	4-2½x3	10.0	23-3800	19-3800	58.8	6.10	40-2000	N	In	L	Sil	1.23	1.10	1.00	.875	.200	.200	.248	.248
99	Hercules ZXB	T,Tr,M,Ind	4-2⅝x3	11.0	25-3800	21-3800	64.9	6.10		N	In	L	Sil	1.23	1.10	1.00	.875	.200	.200	.248	.248

(For abbreviations see pages 250-251)

Engines—*Continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT									CARBURETOR			OVERALL DIMENSIONS (In.)			
Seats													Crank-Pin	MAIN BEARINGS												
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Front End Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Spark Plug—Thread Size	Make	Size	Engine Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Line Number
(h)	E	WA	HG	CT	.....	.859x2.50	4	1030	7	.....	1045	N	1.93x1.31	3	2.25x1.18	2.25x1.89	abcet	18 mm	.....	1¼	400	26	26½	29 7/16	1
(h)	E	WA	HG	CT	.....	.859x2.68	4	1030	7	.....	1045	N	1.93x1.31	3	2.25x1.18	2.25x1.89	abcet	18 mm	.....	1¼	405	26	26½	29 7/16	2
(h)	E	WA	HG	CT	.....	.859x2.87	4	1030	7	.....	1045	N	1.93x1.31	3	2.25x1.18	2.25x1.89	abcet	18 mm	.....	1¼	410	26	26½	29 7/16	3
(h)	E	WA	Ch	CT	.....	.859x2.50	4	1030	7	.....	1045	Y	1.93x1.31	4	2.25x1.21	2.25x1.81	abcet	18 mm	.....	1¼	481	26	27¼	36 3/16	4
(h)	E	WA	Ch	CT	.....	.859x2.66	4	1030	7	.....	1045	Y	1.93x1.31	4	2.25x1.21	2.25x1.81	abcet	18 mm	.....	1¼	491	26	27¼	36 3/16	5
(h)	E	WA	Ch	CT	.....	.859x2.62	4	1030	7	.....	1045	Y	1.93x1.31	4	2.25x1.21	2.25x1.81	abcet	18 mm	.....	1¼	506	26	27¼	36 3/16	6
(h)	E	WA	Ch	CT	.....	.859x2.68	4	1030	7	.....	1045	Y	1.93x1.31	4	2.25x1.21	2.25x1.81	abcet	18 mm	.....	1¼	512	26	27¼	36 3/16	7
(k)	E	Tun	HG	Al	.....	.859x2.87	5	1035	8 3/8	.....	1045	Y	2.12x1.37	4	2.37x1.43	2.37x2.06	abcet	18 mm	.....	1¼	546	26	28 1/16	38 1/16	8
(h)	E	WA	HG	CT	.....	1.10x3.06	4	1035	8 3/8	.....	1045	Y	2.25x1.56	7	2.62x1.56	2.62x2.18	abcet	18 mm	.....	1½	750	25¾	29½	42	9
(h)	E	WA	HG	CT	.....	1.10x3.18	4	1035	8 3/8	.....	1045	Y	2.25x1.56	7	2.62x1.56	2.62x2.18	abcet	18 mm	.....	1½	760	25¾	29½	42	10
(h)	E	WA	HG	CT	.....	1.10x3.43	4	1035	8 3/8	.....	1045	Y	2.25x1.56	7	2.62x1.56	2.62x2.18	abcet	18 mm	.....	1½	770	25¾	29½	42	11
(k)	E	HS	HG	Al	.....	1.25x3.36	5	1035	8 3/8	.....	1045	Y	2.50x1.69	7	2.87x1.65	2.87x2.72	abcet	18 mm	.....	1¾	855	26	29¼	43 1/16	12
(k)	E	HS	HG	Al	.....	1.25x3.63	5	1035	8 3/8	.....	1045	Y	2.50x1.69	7	2.87x1.65	2.87x2.72	abcet	18 mm	.....	1¾	870	26	29¼	43 1/16	13
30	E	HS	Ch	Al	.....	1.25x3.43	4	1035	9½	.....	4140	N	2.50x1.81	7	2.75x1.75	2.75x2.81	abcefg	18 mm	.....	1¾	1298	25¾	36 1/16	46 1/16	14
30	E	HS	Ch	Al	.....	1.25x3.68	4	1035	9½	.....	4140	N	2.50x1.81	7	2.75x1.75	2.75x2.81	abcefg	18 mm	.....	1¾	1318	25¾	36 1/16	46 1/16	15
30	E	HS	Ch	Al	.....	1.50x3.71	4	1035	10½	.....	4140	Y	2.75x1.81	7	2.75x1.75	2.75x2.81	abcefg	18 mm	.....	2	1430	25¾	39 5/16	46 1/16	16
45	E	SA	Ch	Al	.....	.859x2.62	4	MS	7 1/16	31	1040	Y	1.93x1.00	4	2.25x1.23	2.25x1.87	abce	14 mm	Car	1½	500	23¾	31 1/32	37 1/16	17
45	E	SA	Ch	Als	.....	.859x2.75	4	MS	7 1/16	31	1040	Y	2.06x1.00	4	2.50x1.93	2.50x1.87	abce	14 mm	Str	1½	535	23¾	31 1/32	37 1/16	18
45	E	SA	Ch	Al	.....	.859x2.87	4	MS	8	.....	1040	Y	2.12x1.21	4	2.50x1.31	2.50x1.87	abce	14 mm	Car	1½	580	23¾	31 1/32	39 1/16	19
45	E	SA	Ch	Al	20	.859x2.87	4	MS	7 7/16	36	1040	Y	2.12x1.21	4	2.50x1.31	2.50x1.87	abce	14 mm	Car	1½	600	23¾	31 1/32	39 1/16	20
45	E	SA	Ch	Als	28	1.12x3.25	4	MS	10 1/16	56	1040	Y	2.31x1.43	7	3.00x1.87	3.00x3.04	abce	14 mm	Str	1½	1050	24¾	31½	49 3/16	21
45	N	.....	HG	Als	77	1.37x4.17	4	1040	12¾	132	CNS	Y	2.37x3.00	3	2.62x3.31	2.62x4.00	abcdeg	7/16-18	Zen	1½	1450	27	37 1/16	70 1/16	22
45	N	.....	HG	Als	77	1.37x4.17	4	1040	12¾	132	CNS	Y	2.37x3.00	4	2.62x3.31	2.62x4.00	abcdeg	7/16-18	Zen(2)	1½	1900	27	37 1/16	87 1/16	23
45	Bo	CNT	HG	CAS	17	.750x .	3	MS	6 1/16	20	CAS	Y	2.10x1.12	3	2.25x1.60	2.25x1.60	abc	14 mm	Own	.87	.					24
45	Bo	CNT	HG	CAS	15	.750x .	3	MS	7	17	CAS	Y	2.00x1.75	3	2.50x1.37	2.50x1.97	abc	14 mm	Own	.94						25
45	Bo	CNT	HG	CAS	17	.750x .	3	MS	7	17	CAS	Y	2.14x1.75	3	2.50x1.37	2.50x1.97	abc	14 mm	Own	.94						26
30	.....	.....	HG	Al	18	.859x3.12	5	AS	7	74	CS	Y	1.93x1.00	3	2.25x1.25	2.25x1.50	ace	14 mm	Op	1¼	315	34	18½	18	27
(h)	Bo	CNM	HG	Al	.....	.890x3.43	4	3140	6	27	1045	Y	1.93x1.15	3	2.25x1.21	2.25x1.62	abcg	14 mm	Zen							28
30	.....	.....	HG	Al	36	1.25x3.12	5	AS	9½	54	CS	.....	2.37x1.75	7	2.70x2.25	2.70x2.87	abcdefg	18 mm	Zen	1½	1247	40 1/16	27¾	44	29
30	.....	.....	HG	Al	36	1.25x3.12	5	AS	9½	54	CS	.....	2.37x1.75	7	2.70x2.25	2.70x2.87	abcdeg	18 mm	Zen	1½	1087	24½	37 1/16	44	30
30	.....	.....	HG	Al	38	1.25x3.12	5	AS	9½	54	CS	.....	2.37x1.75	7	2.70x2.25	2.70x2.87	abcdefg	18 mm	Zen	1½	1247	40 1/16	27¾	44	31
30	.....	.....	HG	Al	38	1.25x3.12	5	AS	9½	54	CS	.....	2.37x1.75	7	2.70x2.25	2.70x2.87	abcdeg	18 mm	Zen	1½	1087	24½	37 1/16	44	32
30	E	WR	HG	Al	33	.990x3.08	4	1040-A	7	33	1050	Y	2.31x1.23	4	2.69x1.19	2.78x1.47	abcdeg	14 mm	Zen	1⅜	.....	21 1/32	26 7/16	40 3/16		33
30	E	WR	HG	Al	34	.990x3.25	4	1040-A	7	33	1050	Y	2.31x1.23	4	2.69x1.19	2.78x1.47	abcdeg	14 mm	Zen	1⅜	.....	21 1/32	26 7/16	40 3/16		34
30	E	WR	HG	Al	34	.990x3.25	4	1040-A	7	33	1050	Y	2.31x1.23	4	2.69x1.19	2.78x1.47	abcdeg	14 mm	Zen	1⅜	.....	21 1/32	26 7/16	40 3/16		35
45	E	WR	HG	Al	37	1.00x3.18	4	1040-A	9¾	51	1050	Y	2.37x1.34	7	2.75x2.09	2.75x2.09	abcdeg	14 mm	Zen	1⅜	.....	25 1/16	31 1/32	45 5/16		36
45	E	WR	HG	Al	40	1.00x3.36	4	1040-A	9¾	51	1050	Y	2.37x1.34	7	2.75x2.09	2.75x2.09	abcdeg	14 mm	Zen	1⅜	.....	25 1/16	31 1/32	45 5/16		37
(h)	E	St	HG	Al	59	1.25x3.59	4	1040-A	10¾	73	1050	Y	2.62x1.47	7	3.00x2.22	3.00x2.22	abcdeg	14 mm	Zen	1½	.....	22 1/16	35 7/16	47 1/16		38
(h)	E	St	HG	Al	60	1.25x3.71	4	1040-A	10¾	73	1050	Y	2.62x1.47	7	3.00x2.22	3.00x2.22	abcdeg	14 mm	Zen	1½	.....	22 1/16	35 7/16	47 1/16		39
(h)	E	St	HG	Al	63	1.25x3.84	4	1040-A	10¾	73	1050	Y	2.62x1.47	7	3.00x2.22	3.00x2.22	abcdeg	14 mm	Zen	1¾	.....	22 1/16	35 7/16	47 1/16		40
(h)	E	St	HG	Al	64	1.25x3.96	4	1040-A	10¾	.....	1050	Y	2.62x1.75	7	3.00x2.22	3.00x2.22	abcdeg	14 mm	Zen	1¾	.....	22 1/16	35 7/16	47 1/16		41
30	E	St	HG	Al	66	1.25x4.06	4	1040-A	10½	82	1050	Y	2.62x1.72	7	3.50x2.50	3.50x2.50	abcdeg	14 mm	Zen	2	.....	27	47	50		42
30	E	St	HG	Al	77	1.37x4.47	5	4140-A	12 1/16	77	4140	Y	2.75x2.06	7	3.00x1.72	3.00x2.50	abcdeg	18 mm	Str	2	.....	29½	50	62 1/16		43
(h)	N	.....	HG	CI	16	.703x2.06	3	CS	5 3/4	17	1045	N	1.50x1.18	3	1.75x1.78	1.75x1.37	abce	14 mm	Zen	¾	330	16 1/4	17½	30		44
(h)	N	.....	HG	CI	21	.703x2.43	3	CS	5 3/4	17	1045	N	1.50x1.18	3	1.75x1.78	1.75x1.37	abce	14 mm	Zen	1	375	15	18 5/8	30 5/16		45
(h)	N	.....	HG	Al	16	.703x2.43	3	CS	5 3/4	17	1045	N	1.50x1.18	3	1.75x1.78	1.75x1.37	abce	14 mm	Zen	1⅜	340	17 3/16	18½	30		46
(h)	N	.....	HG	Al	16	.703x2.43	3	CS	5 3/4	17	1045	N	1.50x1.18	3	1.75x1.78	1.75x1.37	abce	14 mm	Zen	1	265	21 3/16	22 7/16	24½		47
(h)	N	.....	HG	Al	16	.703x2.43	3	CS	5 3/4	17	1045	N	1.50x1.18	3	1.75x1.78	1.75x1.37	abce	14 mm	Zen	1	260	21 3/16	22 7/16	24½		48
(h)	N	.....	HG	CI	25	.709x2.68	3	CS	5 3/4	17	1045	N	1.50x1.18	3	1.75x1.66	1.75x1.28	abce	14 mm	Zen	1	410	15	18 5/8	31 5/8		49
(h)	N	.....	HG	Al	20	.859x2.68	4	CS	7	32	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	abce	18 mm	Zen	1¼	510	18 7/16	23½	35 1/16		50
(h)	N	.....	HG	Al	20	.859x2.68	4	CS	7	32	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	abce	18 mm	Zen	1¼	435	20 1/4	21 7/16	33		51
(h)	N	.....	HG	Al	24	.859x2.68	4	CS	7	32	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	abce	18 mm	Zen	1¼	540	18 7/16	23½	35 1/16		52
(h)	N	.....	HG	Al	24	.859x2.68	4	CS	7	32	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	abce	18 mm	Zen	1¼	460	20 1/4	21 7/16	33		53
(h)	N	.....	HG	Al	24	.859x2.68	4	CS	7	32	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	abce	18 mm	Zen	1¼	465	22¾	27¾	33		54
(h)	N	.....	HG	CI	29	.859x2.68	4	CS	7	32	1045	Y	1.93x1.31	4	2.25x1.81	2.25x1.21	abce	18 mm	Zen	1¼	650	18½	23	41		55
(h)	N	.....	HG	CI	31	.859x2.68	4	CS	7	32	1045	Y	1.93x1.31	4	2.25x1.81	2.25x1.21	abce	18 mm	Zen	1½	665	18½	23	42		56
(h)	N	.....	HG	Al	20	.859x2.68	4	CS	7	32	1045	Y	1.93x1.31	4	2.25x1.81	2.25x1.21	abce	18 mm	Zen	1½	625	23	22	39 7/16		57
(h)	N	.....	HG	Al	20	.859x2.68	4	CS	7	32	1045	Y	1.93x1.31	4	2.25x1.81	2.25x1.21	abce	18 mm	Zen	1¼	630	23	22	39 7/16		58
45	N	.....	HG	Al	28	.859x2.87	4	CS	8 3/8	34	1045	Y	2.12x1.37	5	2.37x2.06	2.37x1.43	abce	18 mm	Zen	1¾	795	22	26 1/16	43 5/16		59
45	N	.....	HG	Al	28	.859x2.87	4	CS	8 3/8	34	1045	Y	2.12x1.37	5	2.37x2.06	2.37x1.43	abce	18 mm	Zen	1¾	750	24½	25½	42 7/16		60
(h)	N	.....	HG	Al	28	.859x2.87	4	CS	8 3/8	34	1045	Y	2.12x1.37	4	2.37x2.06	2.37x1.43	abce	18 mm	Str	1½	730	22½	30	42¾		61
(h)	N	.....	HG	Al	28	.859x2.87	4	CS	8 3/8	34	1045	Y	2.12x1.37	4	2.37x2.06	2.37x1.43	abce	18 mm	Str	1½	730	22½	30	42¾		62
(h)	N	.....	HG	Al	28	.859x2.87	4	CS	8 3/8	34	1045	Y	2.12x1.37	4	2.37x2.06	2.37x1.43	abce	18 mm	Zen	1½	730	30¾	32½	42¾		63
45	N	.....	HG	Al	25	.874x2.92	4	CS	8 3/8	32	1045	Y	2.12x1.37	4	2.39x1.91	2.39x1.50	abce	18 mm	Zen	1½	595	28 3/16	23	38 7/16		64
(h)	N	.....	HG	Al	40	1.10x3.18	4	CS	8 3/8	47	1045	Y	2.25x1.56	7	2.62x2.15	2.62x1.56	abce	18 mm	Str	1½	985	23½	26	49 5/16		65
(h)	N	.....	HG	Al	45	1.10x3.43	4	CS	8 3/8	47	1045	Y	2.25x1.56	7	2.62x2.15	2.62x1.56	abce	18 mm	Str	1¾	1015	23½	26	49 5/8		66
(h)	N	.....	HG	Al	45	1.10x3.43	4	CS	8 3/8	47	1045	Y	2.25x1.56	7	2.62x2.15	2.62x1.56	abce	18 mm	Str	1½	990	23½	26	49		67
30	E	HS	HG	CI	74	1.25x3.43	4	CS	9	60	1045	Y	2.37x1.81	7	2.62x2.65	2.62x1.65	abce	18 mm	Str	1½	1250	22	29 5/8	55 5/8		68
(h)	N	.....	HG	Al	30	1.11x3.05	4	CS	9	49	1045	Y	2.25x1.50	5	2.62x2.53	2.62x1.65	abce	18 mm	Str	1½	1275	25¾	28	59½		69
(h)	N	.....	HG	Al	30	1.11x3.05	4	CS	9	49	1045	Y	2.25x1.50	5	2.62x2.53	2.62x1.65	abce	18 mm	Str	1½	1250	25¾	28	54 7/8		70
45	N	.....	HC	Al	57	1.25x3.75	6	AS	11	104	4140	N	2.25x2.45	3	2.75x2.31	2.75x2.31	abcefg	7/16-18	Zen	1½	1135*	27 1/16	40½	46 1/16		71
45	N	.....	HC	Al	57	1.25x3.75	6	AS	11	104	3140	N	2.25x2.45	3	2.75x2.31	2.75x2.31	abcefg	18 mm	Zen	1¾	††	24⅝	(6)	(7)		72
45	N	.....	HC	Al	74	1.25x4.25	6	AS	11	101	4140	N	2.37x2.45	3	3.00x2.31	3.00x2.31	abcefg	7/16-18	Zen	1½	1160*	27 1/16	40¾	49 1/16		73
45	N	.....	HC	Al	41	1.00x3.34	4	AS	11	75	4140	N	2.25x1.88	4	2.75x2.68	2.75x2.68	abcefg	18 mm	Zen	1½	1180*	25¾	38 3/16	49 1/16		74
30	E	CA	Ch	Al	40	1.25x3.50	5	AS	11	90	4140	Y	2.62x2.00	7	3.00x1.50	3.00x2.25	abcefg	18 mm	Zen	1½	1235*	54¾	18 7/16	52 7/16		75
45	N	.....	HC	Al	58	1.25x3.75	5	AS	11	101	4140	Y	2.37x2.45	4	2.75x2.18	2.75x3.18	abcefg	18 mm	Zen	1¾	1310*	31¼	40 5/8	55 7/16		76
45	N	.....	HC	Al	52	1.25x3.75	5	AS	11	104	4140	N	2.25x2.45	4	2.75x2.18	2.75x3.18	abcefg	18 mm	Zen	1¾	2130*	23 1/16	42	89 7/16		77
30	E	CA	Ch	Al	52	1.12x3.74	4	AS	11	104	4140	Y	2.62x2.00	7	3.00x1.50	3.00x2.25	abcefg	18 mm	Zen	1¾	1252*	54¾	18 7/16	52 7/16		78
45	N	.....	HC	Al	60	1.25x3.75	5	AS	11	101	4140	Y	2.37x2.45	4	2.75x2.18	2.75x3.18	abcefg	18 mm	Zen	1¾	2392*	28	42½	90		79
45	N	.....	HC	Al	60	1.25x3.75	5	AS	11	101	4140	Y	2.37x2.45	4	2.75x2.18	2.75x3.18	abcefg	18 mm	Zen	1¾	1510*	29 1/16	46 1/16	55 7/16		80
30	E	CA	Ch	Al	56	1.12x3.98	4	AS	11	104	4140	Y	2.62x2.00	7	3.00x1.50	3.00x2.25	abcefg	18 mm	Zen	1¾	1265*	54¾	18 7/16	52 7/16		81
30	E	CA	Ch	Al	77	1.37x4.20	5	AS	11	119	4140	Y	2.75x2.45	7	3.00x2.18	3.25x2.56	abcefg	18 mm	Zen	2	1960*	53 1/16	20 1/16	69 3/16		82
(h)	E	CA	HC	Al	97	1.37x4.20	4	AS	11	117	4140	Y	2.50x2.45	7	3.25x1.56	3.25x2.56	abcefg	18 mm	Zen(2)	2	1975*	28 1/16	41 7/16	59 7/16		83
30	N	.....	Ch	Al	78	1.25x4.26	4	AS	11	101	4140	Y	2.37x2.45	7	2.75x4.56	2.75x2.44	abcefg	18 mm	Zen(2)	2	2820*	31½	42	90 7/16		84
(h)	E	CA	HC	Al	104	1.37x4.43	5	AS	11	117	4140	Y	2.50x2.45	7	3.25x1.56	3.25x2.56	abcefg	18 mm	Zen(2)	2	2020*	28 1/16	41 7/16	59 7/16		85
30	E	CA	HC	Al	104	1.37x4.43	5	AS	11	119	4140	Y	2.75x2.45	7	3.25x2.18	3.25x2.56	abcefg	18 mm	Zen(2)	1⅜	2035*	53 1/16	22 1/16	69 3/16		86
(h)	E	CA	HC	Al	114	1.37x4.68	5	AS	11	117	4140	Y	2.50x2.45	7	3.25x1.56	3.25x2.56	abcefg	18 mm	Zen(2)	2	2050*	28 1/16	41 7/16	59 7/16		87
30	N	.....	Ch	Al	109	1.37x4.68	5	AS	11	117	4140	Y	2.50x2.45	7	2.75x4.56	2.75x2.44	abcefg	18 mm	Zen(2)	2	2950*	31½	42	90 7/16		88
30	N	.....	Ch	Al	108	1.37x4.68	5	AS	11	117	4140	Y	2.50x2.45	7	2.75x1.94	2.75x1.94	abcefg	18 mm	Zen(2)	2	3265*	25	47 1/16	90 1/16		89
30	N	.....	Ch	Al	108	1.37x4.68	5	AS	11	117	4140	Y	2.50x2.45	7	2.75x1.94	2.75x1.94	abcefgr	18 mm	Zen(2)	2	2200*	25	39 5/16	74 1/16		90
30	E	CA	HC	Al	101	1.37x4.68	6	3140	12	237♦	4140	Y	3.00x2.43	7	3.25x2.09	3.25x3.09	abcefgr	18 mm	Zen(3)	2½	3650*	45	42¾	88		91
30	E	CA	HC	Al	128	1.37x4.94	6	3140	12	237♦	4140	Y	3.00x2.43	7	3.25x2.09	3.25x2.09	abcefgr	18 mm	Zen(3)	2½	4560*	43¾	50 1/4	108 1/16		92
30	E	CA	HC	Al	128	1.37x4.94	6	3140	12	237♦	4140	Y	3.00x2.43	7	3.25x2.09	3.25x2.09	abcefgr	18 mm	Zen(3)	2½	3650*	45	42¾	88		93
30	E	CA	HC	Al	123	1.37x4.94	6	3140	12	237♦	4140	Y	3.00x2.43	7	3.25x2.09	3.25x2.09	abcefgr	18 mm	Zen(4)	2½	4105*	43¾	56¼	91 7/16		94
30	N	.....	HG	CI	17	.687x2.50	3	3140	5 1/8	15	1045	Y	1.50x1.00	2	2.00x1.25	2.00x1.37	abe	14 mm	Op	5/8	131	14 7/16	16¼	18 1/16		95
30	N	.....	HG	CI	28	.750x2.56	3	3140	6 1/16	21	1045	Y	1.75x1.12	2	2.00x1.56	2.00x1.62	abe	7/8-18	Op	Op	270	15¼	18½	18 5/8		96
30	N	.....	HG	CI	29	.750x2.81	3	3140	6 1/16	21	1045	Y	1.75x1.12	2	2.00x1.56	2.00x1.62	abe	7/8-18	Op	Op	270	15¼	18½	18 5/8		97
30	N	.....	HG	CI	17	.687x2.18	3	3140	5 1/16	15	1045	N	1.50x1.00	3	2.00x1.31	2.00x1.37	abe	14 mm	Op	Op	179	14¾	16 1/16	21 1/16		98
30	N	.....	HG	CI	19	.687x2.31	3	3140	5 1/16	15	1045	N	1.50x1.00	3	2.00x1.31	2.00x1.37	abe	14 mm	Op	Op	179	14¾	16 1/16	21 1/16		99

(For abbreviations see pages 250-251)

American Gasoline

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	Rated or Tax Hp.	MAXIMUM BRAKE Hp.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.)	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES								
					With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
														Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Hercules IX-3, IX-5	T,Tr,M,Ind	4-2½x4	10.0	28-3200	24-3200	78.0	5.20	55-2000	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
2	Hercules IXF-3	T,Tr,M,Ind	4-2¾x4	12.1	33-3200	28-3200	95.0	5.50	65-2000	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
3	Hercules IXA-3, IXA-5	T,Tr,M,Ind	4-3x4	14.4	40-3200	34-3200	113.0	5.50	79-2000	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
4	Hercules IXK-3	T,Tr,M,Ind	4-3⅛x4	15.6	43-3200	37-3200	122.9	5.50	86-2000	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
5	Hercules IXB-3, IXB-5	T,Tr,M,Ind	4-3¼x4	16.9	47-3200	40-3200	133.0	5.20	92-2000	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
6	Hercules OOA	T,Tr,M,Ind	4-3½x4½	19.6	35-2000	30-2000	163.2	4.20	107-1200	N	In	L	CNS	1.75	1.62	1.50	1.37	.326	.326	.373	.373
7	Hercules OOB	T,B,Tr,M,Ind	4-3¾x4½	22.5	38-2000	32-2000	198.8	4.20	125-1000	N	In	L	CNS	1.75	1.62	1.50	1.37	.326	.326	.373	.373
8	Hercules OOC	T,B,Tr,M,Ind	4-4x4½	25.6	41-2000	35-2000	226.2	4.20	143-1000	N	In	L	CNS	1.75	1.62	1.50	1.37	.326	.326	.373	.373
9	Hercules OX	T, Tr, Ind	4-4x5	25.6	46-1800	39-1800	251.3	4.30	155-1000	N	In	L	CNS	1.87	1.87	1.62	1.62	.326	.326	.373	.373
10	Hercules OXC	T, Tr, Ind	4-4¼x5	28.9	56-1800	47-1800	283.5	4.30	185-1000	N	In	L	CNS	1.87	1.87	1.62	1.62	.326	.326	.373	.373
11	Hercules K	T, Tr, Ind	4-4¼x5¾	28.9	55-1600	47-1600	326.3	3.89	202-1000	N	In	L	Sil	2.25	2.25	2.00	2.00	.326	.326	.434	.434
12	Hercules L	T, Tr, Ind	4-4½x5¾	32.4	59-1600	50-1600	365.8	3.78	226-1000	N	In	L	Sil	2.25	2.25	2.00	2.00	.326	.326	.434	.434
13	Hercules G	T, Tr, Ind	4-4¾x5¾	36.1	63-1600	54-1600	407.6	3.89	250-1000	N	In	L	Sil	2.25	2.25	2.00	2.00	.326	.326	.434	.434
14	Hercules E	T, Tr, Ind	4-5x5¾	40.0	74-160.	63-1600	451.4	4.00	288-1000	N	In	L	Sil	2.25	2.25	2.00	2.00	.326	.326	.434	.434
15	Hercules TX	Tr, Ind	4-5½x7	48.4	88-1200	75-1200	665.0	3.84	425-800	N	In	L	Sil	2.90	2.90	2.50	2.50	.375	.375	.497	.497
16	Hercules TXA	Tr, Ind	4-6x7	57.6	98-1200	83-1200	792.0	3.84	485-800	N	In	L	Sil	2.90	2.90	2.50	2.50	.375	.375	.497	.497
17	Hercules TXO	Tr, Ind	4-6⅜x7	65.0	112-1200	90-1200	894.0	3.84	586-800	N	In	L	Sil	2.90	2.90	2.50	2.50	.375	.375	.497	.497
18	Hercules QXA-3, QXA-5	T,B,Tr,M,Ind	6-3½x4½	23.4	59-3000	50-3000	190.0	5.50	132-1000	N	In	L	CNS	1.50	1.37	1.31	1.12	.281	.281	.310	.310
19	Hercules QXB-3, QXB-5	T,B,Tr,M,Ind	6-3¼x4⅛	25.3	67-3500	57-3500	205.0	5.85	150-1000	N	In	L	CNS	1.50	1.37	1.31	1.12	.281	.281	.310	.310
20	Hercules QXC-3, QXC-5	T,B,Tr,M,Ind	6-3⅜x4⅛	27.3	73-3500	62-3500	221.0	5.85	159-1000	N	In	L	CNS	1.62	1.37	1.43	1.12	.281	.281	.310	.310
21	Hercules QXD-3, QXD-5	T,B,Tr,M,Ind	6-3⅞x4⅛	28.3	73-3000	62-3000	230.0	6.50	171-1100	N	In	L	CNS	1.62	1.37	1.43	1.12	.281	.281	.310	.310
22	Hercules JXA	T,B,Tr,M,Ind	6-3⅜x4¼	27.3	63-2800	53-2800	228.0	5.16	141-1000	N	In	L	CNS	1.75	1.62	1.50	1.37	.322	.322	.373	.373
23	Hercules JXF	T,B,Tr,M,Ind	6-3½x4¼	27.8	71-3000	60-3000	232.3	6.16	151-1200	N	In	L	CNS	1.75	1.62	1.50	1.37	.322	.322	.373	.373
24	Hercules JXE-3, JXG	T,B,Tr,M,Ind	6-3½x4¼	29.4	77-3000	65-3000	246.0	6.11	169-1000	N	In	L	CNS	1.75	1.62	1.50	1.37	.356	.356	.373	.373
25	Hercules JXB	T,B,Tr,M,Ind	6-3⅝x4¼	31.5	84-3000	71-3000	263.0	5.40	195-1000	N	In	L	CNS	1.75	1.62	1.50	1.37	.356	.356	.373	.373
26	Hercules JXC	T,B,Tr,M,Ind	6-3¾x4¼	33.7	87-3000	74-3000	282.0	5.90	215-1000	N	In	L	CNS	1.75	1.62	1.50	1.37	.356	.356	.373	.373
27	Hercules JXD	T,B,Tr,M,Ind	6-4x4¼	38.4	110-3000	93-3000	320.0	6.50	243-1200	N	In	L	CNS	1.75	1.62	1.50	1.37	.356	.356	.373	.373
28	Hercules WXC	T,B,Tr,M,Ind	6-4x4½	38.4	103-2800	87-2800	339.0	5.96	255-1100	N	In	L	Sil	1.75	1.75	1.62	1.50	.388	.388	.373	.373
29	Hercules WXC-2	T,B,Tr,M,Ind	6-4⅛x4½	40.3	110-2800	93-2800	360.8	5.96	271-1100	N	In	L	Sil	1.75	1.75	1.62	1.50	.388	.388	.373	.373
30	Hercules WXC-3	T,B,Tr,M,Ind	6-4¼x4½	43.3	117-2800	99-2800	383.0	5.96	288-1100	N	In	L	Sil	1.75	1.75	1.62	1.50	.388	.388	.373	.373
31	Hercules WXLC	T,B,Tr,M,Ind	6-4x4¾	38.4	111-2800	94-2800	358.0	6.29	268-1100	N	In	L	Sil	1.75	1.75	1.62	1.50	.388	.388	.373	.373
32	Hercules WXLC-3	T,B,Tr,M,Ind	6-4¼x4¾	43.4	126-2800	107-2800	404.0	6.29	302-1000	N	In	L	Sil	1.75	1.75	1.62	1.50	.388	.388	.373	.373
33	Hercules YXC	T,B,Tr,M,Ind	6-4⅜x4¾	45.9	116-2400	98-2400	428.4	6.29	335-1150	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
34	Hercules YXC-2	T,B,Tr,M,Ind	6-4½x4¾	48.6	123-2400	104-2400	453.0	6.29	357-1100	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
35	Hercules YXC-3	T,B,Tr,M,Ind	6-4⅝x4¾	51.3	129-2400	109-2400	478.8	6.29	374-1100	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
36	Hercules RXB	T,B,Tr,M,Ind	6-4½x5¼	48.6	121-2400	103-2400	500.9	5.41	362-1100	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
37	Hercules RXC	T,B,Tr,M,Ind	6-4⅝x5¼	51.3	131-2400	111-2400	529.2	5.41	395-1000	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
38	Hercules RXLC	T,B,Tr,M,Ind	6-4⅝x5¼	51.3	144-2400	122-2400	529.2	6.20	413-1000	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
39	Hercules RXLD	T,B,Tr,M,Ind	6-4¾x5¼	54.2	152-2400	129-2400	558.0	6.20	438-1000	N	In	L	Sil	2.00	2.00	1.81	1.75	.388	.388	.373	.373
40	Hercules HXB	T,B,Tr,M,Ind	6-5x6	60.0	160-2100	136-2100	707.0	5.75	502-900	N	Se	L	Sil	2.43	2.31	2.12	2.00	.468	.468	.498	.498
41	Hercules HXC	T,B,Tr,M,Ind	6-5¼x6	66.2	177-2100	150-2100	779.0	5.69	550-1000	N	Se	L	Sil	2.43	2.31	2.12	2.00	.468	.468	.498	.498
42	Hercules HXD	T,B,Tr,M,Ind	6-5½x6	72.8	184-1800	156-1800	855.0	5.73	630-900	N	Se	L	Sil	2.43	2.31	2.12	2.00	.468	.468	.498	.498
43	Hercules HXE	T,B,Tr,M,Ind	6-5¾x6	79.4	200-1800	170-1800	935.0	5.50	695-900	N	Se	L	Sil	2.43	2.31	2.12	2.00	.468	.468	.498	.498
44	Hudson 10-C	C, T	6-3x4⅛	21.6		92-4000	175.0	7.25	138-1400	N	In	L	Sil	1.37	1.37	1.26	1.23	.343	.343	.341	.339
45	Hudson 18-C	C, T	6-3x5	21.6		98-4000	212.0	6.50	167-1200	N	In	L	Sil	1.37	1.37	1.26	1.23	.343	.343	.341	.339
46	International U-2	M, Ind	4-3x4	14.4	24-1800	22-1800	113.1	5.23	78-1000	W	In	I	CNS	1.34	1.21	1.18	1.06	.261	.261	.341	.341
47	International U-4	M, Ind	4-3⅜x4¼	18.2	33-1800	31-1800	152.1	5.90	108-1250	D	In	I	CNS	1.50	1.37	1.34	1.21	.343	.343	.341	.341
48	International U-6	M, Ind	4-3⅞x5¼	24.0	42-1500	41-1500	247.7	5.65	162-900	D	In	I	CNS	1.81	1.65	1.59	1.43	.438	.438	.371	.371
49	International U-21	M, Ind	6-3¾x4½	33.7		66-1800	298.2	5.72	200-1200	W	Se	I	Sil	1.87	1.75	1.62	1.50	.343	.343	.372	.372
50	International PA-100	M, Ind	6-5x5½	60.0		110-1400	648.0	5.30	447-700	W	Se	I	Sil	2.37	2.37	2.12	2.12	.437	.437		
51	Kermath ZX	M	4-2⅝x3			25-3400	65.0	6.00	40-1700	N	In	L	Sil	1.25	1.12	1.12	.875	.250	.250	.310	.310
52	Kermath IXH	M	4-3¼x4			60-3600	134.0	5.50	97-2200	N	In	L	Sil	1.48	1.35	1.25	1.12	.250	.250	.310	.310
53	Kermath	M	4-3⅛x4⅜			61-3600	134.0	6.80	106-2200	N	In	L		1.53	1.46						
54	Kermath P-841	M	6-3¼x3¾			110-3600	187.0	7.00		N	In	L	Sil	1.47	1.34	1.31	1.18	.296	.296	.312	.312
55	Kermath QXC	M	6-3⅜x4⅛			95-3600	221.0	6.50		N	In	L	Sil	1.87	1.87	1.81	1.81	.281	.281	.310	.310
56	Kermath P-640	M	6-3⅞x4			103-3600	239.0	7.20		N	In	L	Sil	1.59	1.47	1.37	1.31	.296	.296	.312	.312
57	Kermath JXD	M	6-4x4¼			122-3000	320.0	6.90	235-2000	N	In	L	CNS	1.84	1.62	1.62	1.37	.376	.376	.373	.373
58	Kermath WXC	M	6-4¼x4½			115-2600	383.0	5.80	265-1000	N	In	L	Sil	1.87	1.75	1.62	1.50	.356	.356	.373	.373
59	Kermath WXL	M	6-4¼x4¾			155-3000	404.0	6.50		N	In	L	CNS	2.06	1.87	1.81	1.62	.500	.500	.373	.373
60	Kermath D	M	6-4⅜x5¾			150-2500	520.0	5.70		N	Se	L	CNS	2.50	2.25	2.28	2.00	.437	.375	.437	.375
61	Kermath L	M	6-5x5¾			157-2000	678.0	5.30	482-1000	N	Se	L	CNS	2.56	2.37	2.37	2.12	.375	.375	.437	.437
62	Kermath LA	M	6-5x5¾			200-2400	678.0	5.70	480-1000	N	Se	L	CNS	2.62	2.37	2.40	2.00	.437	.375	.437	.437
63	Kermath R	M	6-5x5¾			225-2400	678.0	5.70	540-1700	N	Se	I	CNS	1.93	1.93	1.76	1.76	.375	.375	.375	.375
64	Kermath VF	M	8-3⅛x3¾			85-3800	221.0	6.30	150-2000		In	L	Sil	1.53	1.53			.292	.292	.310	.310
65	Kermath VM	M	8-3⅛x3¾			95-3600	239.0	6.15	170-2100		In	L	CNS	1.53	1.53			.292	.292	.311	.311
66	Kermath P-836	M	8-3¼x3½			100-3600	232.0	7.00	175-1600	N	In	L	Sil	1.37	1.34	1.25	1.19	.328	.328	.312	.312
67	Kermath VZ	M	12-2⅞x3¾			120-3500	292.0				In	L	CNS	1.53	1.53			.292	.292	.311	.311
68	Kermath V	M	12-5x6			500-2400	1414.0	5.70	1070-1400	N	Se	I	CNS	1.93	1.93	1.76	1.76	.375	.375	.437	.437
69	Lathrop Standard	M	2-5⅛x6½			16-600	274.7		140-525	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
70	Lathrop Standard	M	2-5½x6½			20-700	308.8		163-525	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
71	Lathrop Standard	M	3-5⅛x6½			27-700	412.1		206-600	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
72	Lathrop Standard	M	3-5½x6½			34-800	463.2		237-700	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
73	Lathrop LH	M	4-3¼x4			38-2200	133.0		92-2000	N	In	L	CNS			1.25	1.12	.312	.312	.312	.312
74	Lathrop LH	M	4-4x4½			49-1900	226.0		152-1300	N	In	L	CNS			1.50	1.37	.312	.312	.375	.375
75	Lathrop Standard	M	4-5⅛x6½			29-700	549.5		233-500	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
76	Lathrop Standard	M	4-5½x6½			49-800	617.7		342-600	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
77	Lathrop Engineers	M	4-5½x7			64-1000	665.2		373-650	N	Se	L	CNS	2.68	2.50	2.31	2.12	.375	.375	.500	.500
78	Lathrop Engineers	M	4-6x7			76-1000	791.6		461-700	N	Se	L	CNS	2.68	2.50	2.31	2.12	.375	.375	.500	.500
79	Lathrop LH	M	6-3¾x4¼			62-2200	282.0		173-550	N	In	L	CNS			1.50	1.37	.312	.312	.375	.375
80	Lathrop LH-D8	M	6-4x4¼			107-2500	320.0		226-2500	N	In	L	CNS	1.75	1.62	1.50	1.37	.356	.356	.375	.375
81	Lathrop Mystic	M	6-4½x5½			96-1600	524.8		321-1350	N	Se	L	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
82	Lathrop Mystic	M	6-4¾x5½			106-1600	584.7		379-900	N	Se	L	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
83	Lathrop Standard	M	6-5½x6½			73-750	926.5		515-675	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
84	Lathrop Standard	M	6-5½x6½			103-1000	926.5		550-825	N	Se	T	CNS	2.25	2.25	2.00	2.00	.500	.500	.437	.437
85	Lathrop Mystic	M	6-5½x6½			155-1500	926.5		561-1200	N	Se	L	CNS	2.68	2.68	2.31	2.31	.437	.437	.500	.500
86	Lathrop Mystic	M	6-5¾x6½			179-1600	1012.8		640-1100	N	Se	L	CNS	2.68	2.68	2.31	2.31	.437	.437	.500	.500
87	Lehman-Ford F-5	M	4-3⅞x4½		55-2500	50-2500	200.5	4.22	123-1250	N	In	L	NCI	1.37	1.37			.287	.287		
88	Lehman-Ford D-5	M, Ind	8-2.6x3.2		65-3500	60-3500	136.0	6.60	94-2400	N	In	L	CNS	1.28	1.28			.251	.251	.279	.279
89	Lehman-Ford V-5	M, Ind	8-3⅛x3¾		90-3250	85-3250	221.0	6.15	155-2200	N	In	L	CNS	1.54	1.54			.292	.292	.311	.311
90	Lehman-Mercury M-5	M, Ind	8-3.185x3¾		100-3000	95-3000	239.0	6.15	170-2100	D	In	L	CNS	1.54	1.54			.292	.292	.311	.311
91	Lehman-Zephyr Z-5	M, Ind	12-2⅞x3¾		125-3500	120-3500	292.0	7.20	186-2000	N	In	L	CNS	1.54	1.54			.292	.292	.311	.311
92	Mack EN-11	T	6-3⅛x4⅜	24.6	67-3000	58-3000	210.0	6.00	145-1100	N	In	L	Sil	1.51	1.34	1.37	1.18	.296	.296	.343	.343
93	Mack EN-12	T	6-3⅛x4⅜	26.3	72-3000	60-3000	226.0	5.94	166-1000	N	In	L	Sil	1.51	1.34	1.37	1.18	.296	.296	.343	.343
94	Mack FO	T, B	6-3½x4⅜	29.4	78-3000	67-3000	253.0	5.76	175-1200	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.406	.406
95	Mack FM	T, B	6-3⅝x4⅜	31.6	87-3000	72-3000	271.0	5.98	193-1200	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.406	.406
96	Mack FK	T, B	6-3¾x4⅜	33.8	94-3000	79-3000	290.0	5.96	200-1100	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.406	.406
97	Mack EN-310	T, B	6-3⅝x5	31.6	100-2850	85-2850	309.6	5.60	213-1200	N	In	L	Sta	1.89	1.73	1.62	1.50	.365	.365	.375	.375
98	Mack EN-330	T, B	6-4x4¾	38.4	100-2800	86-2800	330.0	6.00	244-1000	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.406	.406
99	Mack EN-354	T, B	6-3⅞x5	36.0	115-2850	99-2850	353.8	5.50	254-1200	N	In	L	Sta	1.89	1.76	1.62	1.50	.365	.365	.375	.375

(For abbreviations see pages 250-251)

Engines—*Continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT																
Seats														MAIN BEARINGS										OVERALL DIMENSIONS (In.)			
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Front End Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Spark Plug—Thread Size	CARBURETOR Make	CARBURETOR Size	Engine Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Line Number
30	N		HG	CI	18	.750x2.18	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	18 mm	Op	Op	255	16 5/16	18 3/4	24 1/8	1
30	N		HG	CI	19	.750x2.43	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	7/8-18	Op	Op	275	16 5/16	18 3/4	24 1/8	2
30	N		HG	CI	28	.750x2.56	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	7/8-18	Op	Op	285	16 5/16	18 3/4	24 1/8	3
30	N		HG	CI	29	.750x2.56	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	7/8-18	Op	Op	280	16 5/16	18 3/4	24 1/8	4
30	N		HG	CI	29	.750x2.81	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	7/8-18	Op	Op	293	16 5/16	18 3/4	24 1/8	5
45	N		HG	CI	49	1.00x3.15	4	1040	8	37	1045	N	2.00x1.50	3	2.00x2.18	2.00x2.62	abe	7/8-18	Op	Op	460	17 1/2	23 1/4	29 7/8	6
45	N		HG	CI	56	1.00x3.25	4	1040	8	37	1045	N	2.00x1.50	3	2.00x2.18	2.00x2.62	abe	7/8-18	Op	Op	460	17 1/2	23 1/4	29 7/8	7
45	N		HG	CI	56	1.00x3.50	4	1040	8	37	1045	N	2.00x1.50	3	2.00x2.18	2.00x2.62	abe	7/8-18	Op	Op	460	17 1/2	23 1/4	29 7/8	8
45	E		HG	CI	67	1.37x3.50	4	1035	9 1/2	58	1045	N	2.00x2.25	3	2.00x3.18	2.00x3.31	abe	7/8-18	Op	1 1/4	655	20 1/32	28 3/32	36 3/32	9
45	E		HG	CI	73	1.37x3.75	4	1035	9 1/2	58	1045	N	2.00x2.25	3	2.00x3.18	2.00x3.31	abe	7/8-18	Op	1 1/4	655	20 1/32	28 3/32	36 3/32	10
45	N		HG	CI	82	1.50x3.75	4	1035	10 7/8	83	1045	N	2.50x2.62	3	3.00x3.37	3.00x3.50	abe	7/8-18	Op	1 1/4	875	21 1/32	30 7/8	41 1/8	11
45	N		HG	CI	95	1.50x4.00	4	1035	10 7/8	83	1045	N	2.50x2.62	3	3.00x3.37	3.00x3.50	abe	7/8-18	Op	1 1/2	880	21 1/32	30 7/8	41 1/8	12
45	N		HG	CI	103	1.50x4.25	4	1035	10 7/8	83	1045	N	2.50x2.62	3	3.00x3.37	3.00x3.50	abe	7/8-18	Op	1 1/2	885	21 1/32	30 7/8	41 1/8	13
45	N		HG	CI	106	1.00x4.50	4	1035	10 7/8	83	1045	N	2.50x2.62	3	3.00x3.37	3.00x3.50	abe	7/8-18	Op	1 1/2	890	21 1/32	30 7/8	41 1/8	14
45	E		HG	CI	196	1.87x4.87	5	1035	13 1/4	178	1045	N	3.00x3.00	3	3.75x4.37	3.75x4.50	abe	7/8-18	Op	1 3/4	1800	26 1/32	38	52 1/2	15
45	E		HG	CI	222	1.87x5.37	5	1035	13 1/4	178	1045	N	3.00x3.00	3	3.75x4.37	3.75x4.50	abe	7/8-18	Op	1 3/4	1815	26 1/32	38	52 1/2	16
45	E		HG	CI	240	1.87x5.75	5	1035	13 1/4	178	1045	N	3.00x3.00	3	3.75x4.37	3.75x4.50	abe	7/8-18	Op	2	1850	29 1/32	38	52 1/2	17
30	N		HG	CI	53	.875x2.67	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	7/8-18	Op	1 1/4	480	17 1/16	20 1/32	33 1/16	18
30	N		HG	CI	53	.875x2.79	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	7/8-18	Op	1 1/4	480	17 1/16	20 1/32	33 1/16	19
30	N		HG	AI	24	.875x2.90	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	7/8-18	Op	1 1/4	483	17 1/16	20 1/32	33 1/16	20
30	N		HG	AI	24	.875x2.90	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	7/8-18	Op	1 1/4	485	17 1/16	20 1/32	33 1/16	21
45	N		HG	CI	43	1.00x2.90	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	7/8-18	Op	1 1/4	550	17 5/8	23 1/32	37 3/8	22
45	N		HG	AI	32	1.00x2.90	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	7/8-18	Op	1 1/4	555	17 5/8	23 1/32	37 3/8	23
45	N		HG	AI	31	1.00x2.90	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	7/8-18	Op	1 1/4	555	17 5/8	23 1/32	37 3/8	24
45	N		HG	AI	35	1.00x3.15	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	7/8-18	Op	1 1/4	560	17 5/8	23 1/32	37 3/8	25
45	N		HG	AI	37	1.00x3.37	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	7/8-18	Op	1 1/4	565	17 5/8	23 1/32	37 3/8	26
45	N		HG	AI	40	1.00x3.51	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	7/8-18	Op	1 3/4	570	17 5/8	23 1/32	37 3/8	27
45	N		HG	CI	64	1.12x3.56	4	3140	9 1/8	51	1045	N	2.25x1.50	7	2.62x1.75	2.62x2.75	abe	7/8-18	Op	1 3/4	805	21	27	41 1/8	28
45	N		HG	CI	65	1.12x3.62	4	3140	9 1/8	51	1045	N	2.25x1.50	7	2.62x1.75	2.62x2.75	abe	7/8-18	Op	1 3/4	810	21	27	41 1/8	29
45	N		HG	CI	83	1.12x3.68	4	3140	9 1/8	51	1045	N	2.25x1.50	7	2.62x1.75	2.62x2.75	abe	7/8-18	Op	1 3/4	820	21	27	41 1/8	30
45	N		HG	AI	47	1.12x3.56	4	3140	8 7/8	50	CS‡	Y	2.25x1.65	7	2.62x1.43	2.62x2.21	abe	7/8-18	Op	1 3/4	811	21	27	41 1/8	31
45	N		HG	AI	55	1.12x3.68	4	3140	8 7/8	50	CS‡	Y	2.25x1.65	7	2.62x1.43	2.62x2.21	abe	7/8-18	Op	1 3/4	825	21	27	41 1/8	32
45	N		HG	CI	79	1.25x3.93	4	1035	9 5/8	64	1045	N	2.50x1.75	7	3.00x2.00	3.00x2.00	abe	7/8-18	Op	1 3/4	975	21 1/32	31 1/32	45 1/8	33
45	N		HG	CI	85	1.25x3.93	4	1035	9 5/8	64	1045	N	2.50x1.75	7	3.00x2.00	3.00x3.00	abe	7/8-18	Op	1 3/4	975	21 1/32	31 1/32	45 1/8	34
45	N		HG	CI	87	1.25x4.06	4	1035	9 5/8	64	1045	N	2.50x1.75	7	3.00x2.00	3.00x3.00	abe	7/8-18	Op	1 3/4	975	21 1/32	31 1/32	45 1/8	35
45	N		HG	AI	60	1.25x3.93	5	3140	9 3/8	81	1045	N	2.62x2.00	7	3.00x1.93	3.00x2.93	abe	7/8-18	Op	1 3/4	1000	21 1/32	31 1/32	45 1/8	36
45	N		HG	AI	62	1.25x4.06	5	3140	9 3/8	81	1045	N	2.62x2.00	7	3.00x1.93	3.00x2.93	abe	7/8-18	Op	1 3/4	1010	21 1/32	31 1/32	45 1/8	37
45	N		HG	AI	65	1.25x4.10	5	CNM	9 3/8	99	CS‡	N	3.00x2.00	7	3.50x1.93	3.50x2.93	abe	7/8-18	Op	1 3/4	1195	22 1/8	30	44 3/4	38
(h)	N		HG	AI	69	1.25x4.10	5	CNM	9 3/8	99	CS‡	N	3.00x2.00	7	3.50x1.93	3.50x2.93	abe	7/8-18	Op	1 3/4	1195	22 1/8	30	44 3/4	39
30	E		HG	AI	95	1.50x4.43	4	3140	12	143	1045	N	3.00x2.25	7	3.50x2.37	3.50x3.50	abce	7/8-18	Op	2	1810	24 1/2	40 1/2	54 1/2	40
30	E		HG	AI	105	1.50x4.56	4	3140	12	143	1045	N	3.00x2.25	7	3.50x2.37	3.50x3.50	abce	7/8-18	Op	2	1810	24 1/2	40 1/2	54 1/2	41
30	E		HG	AI	117	1.50x4.81	4	3140	12	143	1045	N	3.00x2.25	7	3.50x2.37	3.50x3.50	abce	7/8-18	Op	2	1830	24 1/2	40 1/2	54 1/2	42
30	E		HG	AI	127	1.50x5.06	4	3140	12	143	1045	N	3.00x2.25	7	3.50x2.37	3.50x3.50	abce	7/8-18	Op	2	1830	24 1/2	40 1/2	54 1/2	43
45	N		HG	AI	13	.750x2.44	4	1045	8 5/8	31	1045	Y	1.94x1.37	3	2.34x1.62	2.41x2.37	Splash	14 mm	Car	1 1/4	482	25	37 1/4	29 1/2	44
45	N		HG	AI	13	.750x2.44	4	1045	8.175	31	1045	Y	1.94x1.37	3	2.34x1.62	2.41x2.37	Splash	14 mm	Car	1 1/4	504	25	37 1/4	29 1/2	45
45	N			CI	35	.919x2.50	4	1040	7 1/4	33	1045	N	1.75x1.19	3	2.12x1.37	2.12x1.84	abceg	18 mm	Zen	7/8	457	20 5/8	40 1/4	50 1/4	46
45	N			CI	53	1.11x2.78	4	1040	8	57	1045	N	2.25x1.23	3	2.50x1.49	2.50x1.49	abceg	18 mm	Own	1	639	23 1/8	40	54 3/4	47
45	E	Mo		CI	82	1.31x3.25	4	1040	10		1045	N	2.50x1.72	3	2.75x1.56	2.75x1.56	abceg	18 mm	Own	1 1/4	914	25 5/8	50 3/4	62 1/8	48
45			HG	AI	34	1.10x3.17	4	AS	9 1/4	49	CS‡	N	2.25x1.62	7	2.70x1.53	2.70x2.54	abcde	7/8-18	Zen	13 5/8	1950*	28	35 3/8	49 1/8	49
45			HG	CI	130	1.50x4.10	4	AS	11 3/4	137	CNS	N	2.75x2.25	7	3.25x2.56	3.25x3.50	abcde	7/8-18	Zen	1 1/2	3120*	35	50 1/4	59 1/8	50
30	N		HG	CI	19	.687x2.18	3	CS	5 1/8	15	CS	N	1.50x1.00	3	2.00x1.37	2.00x1.31	abcr	14 mm	Str	3/4	300*	18 1/2	17 5/8	29 1/8	51
30	N		HG	AI	20	.750x2.87	4	3140	6 1/16	20	CS	N	1.75x1.12	3	2.00x1.62	2.00x1.58	abcr	7/8-18	Str	1 1/4	405*	23 1/2	21 1/32	34 1/8	52
45	N		Ch	AI	12	.812x	3					Y	1.93x1.31	3			abcr	14 mm	Str	1 1/4		21 1/4	24 1/2	36	53
(h)	N		Ch	CNI	32	.937x2.87	3	DFS	7 1/8	32	DFS	Y	2.00x1.06	5	2.50x1.87	2.37x1.25	abcder	14 mm	Str	1 1/2	860*	24	23 1/8	52 1/2	54
30	N		HG	AI	24	.875x2.79	4	CS	7	26	CS	N	2.00x1.25	7	2.50x1.93	2.50x1.87	abcr	7/8-18	Str	1 1/2	620*	24	24 1/2	42 1/4	55
(h)	N		Ch	CI			3	DFS	7 1/8	37	DFS	Y	2.12x1.28	4	2.62x1.56	2.50x1.25	abcder	14 mm	Str	1 1/2	790*	24	23 1/8	47 1/8	56
30	N		HG	AI	40	1.00x3.51	4	CS	8	38	CS	N	2.00x1.50	7	2.50x2.12	2.50x1.37	abcr	7/8-18	Str	1 3/4	925*	21 1/2	27 3/4	52 3/8	57
45	N		HG	AI		1.12x3.68	4	CS	9 1/8	51	CS	N	2.25x1.50	7	2.62x1.75	2.62x2.75	abcr	14 mm	Str	1 3/4	1125*	24 1/4	29 3/8	56 1/8	58
30	N		HG	AI		1.12x3.62	4	CS	9	51	CS	Y	2.25x1.12	7	2.68x2.75	2.68x1.75	abcr	14 mm	Str	2	1125*	24 1/4	29 3/8	56 1/8	59
(h)	E	HS	HG	Als	62	1.25x3.62	4	DFS	11	80	CS	N	2.25x2.23	7	2.50x3.91	2.50x2.56	abcder	14 mm	Str	2	1390*	26 3/4	33 1/4	69 7/8	60
45	N		HG	Als	82	1.25x4.50	4	DFS	11	80	CS	N	2.25x2.23	7	2.50x3.91	2.50x2.62	abcder	18 mm	Str	2	1570*	29 1/2	34 1/8	69 7/8	61
45	N		HG	Als	82	1.25x4.50	4	DFS	11	80	CS	N	2.25x2.23	7	2.50x3.91	2.50x2.62	abcder	14 mm	Str(2)	1 3/4	1570*	26 1/4	34 1/8	69 7/8	62
45	N		SB	Als	82	1.25x4.50	4	DFS	11	80	DFS	N	2.25x2.23	7	2.50x3.91	2.50x2.62	abcder	18 mm	Str(2)	1 3/4	1500*	30 1/2	39 3/4	69 3/4	63
45	Be	TA	HG	CAS	12	.750x2.85	3	AS	7	16	CAS	Y	2.00x1.94	3	2.00x1.81	2.00x2.25	abcr	7/8-18			730	29 1/8	31 7/8	43 1/32	64
45	Bo	TA	HG	CAS	17	.750x2.84	3	AS	7	17	CAS	Y	2.14x1.75	3	2.50x1.72	2.50x2.25	abce	14 mm			730	29 1/8	31 7/8	43 1/32	65
(h)			Ch	CI	32	.937x2.87	3	DFS	7 1/8	32	DFS	Y	2.00x1.56	5	2.37x2.25	2.24x1.31	abcder	14 mm	Str	1 1/2	860*	24	23 1/8	52 1/2	66
45	Bo	TA	HG	CAS	11	.750x2.48	3	DFS		22	CAS	Y	2.12x1.57	4	2.40x1.83	2.40x2.54	abce	14 mm			800	24 1/32	32	51 1/2	67
45	N		SB	Als	82	1.25x4.50	4	CNS	11	184	CNS	Y	2.75x2.25	7	3.00x3.84	3.00x2.25	abcder	18 mm	Str(4)	2	2700*	42 1/2	43 1/8	75 1/16	68
45			HG	CI	160	1.37x4.62	4	AS	12 1/4	96	CNS	N	1.87x2.75	3	2.25x5.00	2.25x4.00	abe	7/8-18	Zen	1 1/4	975	23 1/2	22	55 1/2	69
45			HG	CI	179	1.37x5.00	4	AS	12 1/4	96	CNS	N	1.87x2.75	3	2.25x5.00	2.25x4.00	abe	7/8-18	Zen	1 1/4	1000	23 1/2	22	55 1/2	70
45			HG	CI	160	1.37x4.62	4	AS	12 1/4	96	CNS	N	1.87x2.75	4	2.25x5.00	2.25x4.00	abe	7/8-18	Zen	1 1/2	1400	25	22 1/4	60 1/2	71
45			HG	CI	179	1.37x5.00	4	AS	12 1/4	96	CNS	N	1.87x2.75	4	2.25x5.00	2.25x4.00	abe	7/8-18	Zen	1 1/2	1450	25	22 1/4	60 1/2	72
30			HG	AI		.750x2.81	3	AS	6 1/16		CNS	N	1.87x2.75	4			abe	7/8-18	Zen	1	440	17 1/2	14 3/8	40 1/2	73
30			HG	AI		1.00x3.50	3	AS	8		CNS	N	1.75x2.75	3	2.00x1.56	2.00x1.62	abe	7/8-18	Zen	1 1/4	690	21 7/8	16	51 1/4	74
45			HG	CI	160	1.37x4.62	4	AS	12 1/4	96	CNS	N	2.00x1.50	3	2.00x2.18	2.00x2.62	abe	7/8-18	Zen	1 1/2	1700	25 3/4	22 1/4	68 1/2	75
45			HG	CI	179	1.37x5.00	4	AS	12 1/4	96	CNS	N	1.87x2.75	5	2.25x5.00	2.25x4.00	abe	7/8-18	Zen	1 1/2	1750	25 3/4	22 1/4	68 1/2	76
45			HG	CI	186	1.50x5.00	4	AS	13 1/4	172	CNS	N	1.87x2.75	5	2.25x5.00	2.25x4.00		7/8-18	Zen		2100	29 1/4	24	74 1/4	77
45			HG	CI	204	1.50x5.50	4	AS	13 1/4	172	CNS	N	2.75x2.75	5	3.00x3.50	3.00x3.50	abce	7/8-18	Zen		2290	29 1/4	24	75	78
30			HG	AI		1.00x3.50	3	AS	8		CNS	N	2.75x2.75	5	3.00x3.50	3.00x3.50	abce	7/8-18	Zen	1 1/4	830	21 1/2	17	51	79
30	E	Spec	HG	AI	40	1.00x3.50	4	DFS	8	36	Spec	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	7/8-18	Zen	1 1/2	820	21 1/2	25	51	80
45			HG	CI	96	1.37x3.87	4	Dur	12 1/4	68	CNS	N	2.00x1.50	7	2.50x1.31	2.50x1.12	abe	7/8-18	Hol		1700	24 1/2	27 3/4	68	81
45			HG	CI	104	1.37x4.12	4	Dur	12 1/4	68	CNS	N	2.25x2.37	7	2.75x3.25	2.75x2.12	abce	7/8-18	Hol		1700	24 1/2	27 3/4	68	82
45			HG	CI	179	1.37x5.00	4	AS	12 1/4	96	CNS	N	2.25x2.37	7	2.75x3.25	2.75x2.12	abce	7/8-18	Zen(2)	1 1/2	2500	26 1/2	22 3/4	90 1/2	83
45			HG	CI	179	1.37x5.00	4	AS	12 1/4	96	CNS	N	2.12x2.75	7	2.62x5.00	2.62x4.00	abe	7/8-18	Zen(2)	1 1/2	2500	26 1/2	23 3/4	88 1/2	84
45			HG	CI	176	1.50x5.00	4	AS	13 1/4	164	CNS	N	2.12x2.75	7	2.62x5.00	2.62x4.00	abe	7/8-18	Hol		2435	24 1/2	29 3/8	78 1/2	85
45			HG	CI	176	1.50x5.12	4	AS	13 1/4	164	CNS	N	2.75x2.75	7	3.00x3.37	3.00x3.25	abce	7/8-18	Hol		2480	24 1/2	29 1/8	78 1/2	86
45	N		HG	AI			3	DFS			CAS	Y	1.50x-,—	3	1.62x-,—	1.62x-,—	abc	7/8-18	Zen	1		22	25 3/4	44 3/4	87
45	E	TA	HG	CAS	8	.688x2.37	3		6 1/8	10	CAS	Y	1.70x1.41	3	2.10x1.62	2.10x2.00	abc	14 mm	Ford	.81		21 1/4	28 3/4	44	88
45	Bo	TA	HG	CAS	12	.750x2.85	3		7	17	CAS	Y	2.00x1.94	3	2.50x1.72	2.50x2.25	abc	14 mm	Ford	.94		22 3/4	30 1/2	46 1/2	89
45	Bo	TA	HG	CAS	13	.750x2.97	3		7	17	CAS	Y	2.14x1.75	3	2.50x1.72	2.50x2.25	abc	14 mm	Ford	.94		22 3/4	30 1/2	46 1/2	90
45	E	TA	HG	CAS	11	.750x2.61	3		7 1/32	22	CAS	Y	2.13x1.75	4	2.40x1.84	2.40x2.25	abc	14 mm	Ford	1		25	31 1/2	59 1/2	91
30	E	HS	HG	CI	31	.859x2.68	4	1030	7	32	1045	Y	1.93x1.31	4	2.25x1.18	2.25x1.81	abct	18 mm	Str	1 1/4	501	26	26	39 3/8	92
30	E	HS	HG	AI	26	.859x2.81	5	1030	7	32	1045	Y	2.06x1.31	4	2.37x1.28	2.37x1.76	abct	18 mm	Str	1 1/4	510	26	26	39 3/8	93
(h)	E	HS	HG	AI	36	1.10x2.91	5	1030	8 3/8	49	1045	Y	2.25x1.56	7	2.62x1.53	2.62x2.15	abct	18 mm	Str	1 1/4	749	18 1/4	29 3/8	40	94
(h)	E	HS	HG	AI	39	1.10x3.06	5	1030	8 3/8	48	1045	Y	2.25x1.56	7	2.62x1.53	2.62x2.15	abct	18 mm	Str	1 1/4	738	18 1/4	29 3/8	40	95
(h)	E	HS	HG	AI	43	1.10x3.18	5	1030	8 3/8	48	1045	Y	2.25x1.56	7	2.62x1.53	2.62x2.15	abct	18 mm	Str	1 1/2	759	18 1/4	29 3/8	40	96
30	E	Nif	HG	Ala	38	1.00x3.25	5	4130	11 1/4	53	1025	Y	2.37x1.62	7	3.00x1.56	3.00x2.56	abcef	18 mm	Str	1 1/2	885	26 7/8	34 1/8	46 11/32	97
(h)	E	HS	HG	AI	47	1.10x3.45	5	1030	8 3/8	49	1045	Y	2.25x1.56	7	2.62x1.53	2.62x2.15	abct	18 mm	Str	1 1/2	771	18 1/4	29 3/8	40	98
30	E	Nif	HG	Ala	43	1.00x3.50	5	4130	11 1/4	53	1025	Y	2.37x1.62	7	3.00x1.56	3.00x2.56	abcef	18 mm	Str	1 3/4	907	26 7/8	34 1/8	46 11/32	99

(For abbreviations see pages 250-251)

American Gasoline

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	Rated or Tax Hp.	MAXIMUM BRAKE Hp.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.)	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
					With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
														Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Mack EN-405	T, B	6-4x5⅜	38.4	119-2650	101-2650	405.0	5.80	300-1100	N	In	I	Sta			1.81	1.56	.471	.471	.437	.437
2	Mack CE	T, B	6-4x5½	38.4	108-2400	96-2400	414.7	5.00	270-1000	N	Se	L	Sta	2.17	2.01	1.81	1.68	.375	.375	.500	.500
3	Mack EN-457	T, B	6-4¼x5⅜	43.3	133-2550	117-2550	457.0	5.56	336-1100	N	In	I	Sta			1.81	1.5	.471	.471	.437	.437
4	Mack CF	T, B	6-4¼x5½	43.3	118-2400	105-2400	467.9	5.00	310-1000	N	Se	L	Sta	2.17	2.01	1.81	1.68	.375	.375	.500	.500
5	Mack CT	T, B	6-4½x5½	48.6	126-2400	112-2400	524.8	4.80	350-1000	N	Se	L	Sta	2.17	2.01	1.81	1.68	.375	.375	.500	.500
6	Mack EO	T, B	6-4⅝x5¾	45.7	145-2350	130-2350	519.0	5.40	378-1000	N	In	I	Sta	2.18	1.89	2.04	1.75	.500	.500	.437	.437
7	Mack EP	T, B	6-4⅝x5¾	54.1	163-2250	140-2250	611.0	5.40	462-1000	N	In	I	Sta	2.18	1.89	2.04	1.75	.500	.500	.437	.437
8	Mack EY	T, B	6-5x6	60.0	178-2150	156-2150	707.0	5.35	530-600	N	In	I	Sta	2.18	1.89	2.04	1.75	.500	.500	.437	.437
9	M-M Twin City (8) EE	Tr, Ind	*4-3⅝x4	21.0	26-1400	24-1400	165.1	5.75	107-1000	N	Se	HH	Sil	1.46	1.46	1.25	1.25	.354	.354	.343	.343
10	M-M Twin City RE	Tr, Ind	4-3⅝x4½	21.0	34-1500	32-1500	185.7	5.75	124-1100	N	Se	HH	Sil	1.46	1.46	1.25	1.25	.354	.354	.343	.343
11	M-M Twin City KEF	Tr, Ind	4-4¼x5	28.9	49-1275	46-1275	283.7	5.60	195-1150	N	Se	I	Sil	1.71	1.59	1.50	1.37	.488	.488	.437	.437
12	M-M Twin City GE	Tr, Ind	4-4⅝x6	34.2	64-1075	59-1275	403.2	5.25	295-950	N	Se	I	Sil	1.84	1.71	1.62	1.50	.488	.488	.437	.437
13	M-M Twin City TA	Ind	4-7¼x9	84.1	119-650		1486.0	4.80	1050-300	N	Se	I	Sil	3.50	3.50	3.00	3.00	.687	.687	.687	.687
14	M-M Twin City BE	Ind	4-7¾x9	96.0	136-650		1698.0	4.40	1150-300	N	Se	I	Sil	3.50	3.50	3.00	3.00	.687	.687	.687	.687
15	M-M Twin City ME	Ind	4-8x9	102.0	145-650		1810.0	4.70	1250-300	N	Se	I	Sil	3.50	3.50	3.00	3.00	.687	.687	.687	.687
16	M-M Twin City CE	Ind	6-4¼x5	43.3	70-1275		425.5	5.60	302-1100	N	Se	I	Sil	1.71	1.59	1.50	1.37	.488	.488	.437	.437
17	M-M Twin City HE	Ind	6-4⅝x6	51.3	92-1075		605.0	5.25	451-1000	N	Se	I	Sil	1.84	1.71	1.62	1.50	.488	.488	.437	.437
18	M-M Twin City SE	Tr, Ind	6-7¼x9	120.0	173-650		2229.0	4.80	1450-400	N	Se	I	Sil	3.50	3.50	3.00	3.00	.687	.687	.687	.687
19	M-M Twin City TE	Ind	6-7¾x9	144.0	198-650		2547.0	4.40	1650-450	N	Se	I	Sil	3.50	3.50	3.00	3.00	.687	.687	.687	.687
20	M-M Twin City NE	Ind	6-8x9	153.6	210-650		2714.0	4.70	1780-450	N	Se	I	Sil	3.50	3.50	3.00	3.00	.687	.687	.687	.687
21	Murray & Tresurtha OC-4	M	4-6½x8			80-1000	1062.4	3.33	560-600	N	Se	I	CNS	2.46	2.46	2.25	2.25	.500	.500	.437	.437
22	Murray & Tresurtha M-4	M	4-6½x8			90-1000	1062.4	4.20	660-700	N	Se	I	CNS	2.46	2.46	2.25	2.25	.500	.500	.437	.437
23	Murray & Tresur ha K-6	M	6-6¼x7¾			346-1650	1426.6	5.25	1110-1525	N	Se	I	CNS	2.46	2.46	2.25	2.25	.375	.375	.437	.437
24	Murray & Tresurtha OC-6	M	6-6½x8			140-1100	1593.6	3.33	910-600	N	Se	I	CNS	2.46	2.46	2.25	2.25	.500	.500	.437	.437
25	Murray & Tresurtha M-6	M	6-6½x8			175-1100	1593.6	4.20	882-695	N	Se	I	CNS	2.46	2.46	2.25	2.25	.500	.500	.437	.437
26	Murray & Tresurtha OCX-6	M	6-7¼x8			175-1100	1981.4	4.00	1030-800	N	Se	I	CNS	2.71	2.46	2.37	2.25	.531	.531	.437	.437
27	Plymouth T-125	T	6-3⅛x4⅜	23.4		82-3000	201.3	6.70	160-1200	N	In	L	Sil	1.47	1.47	1.31	1.31	.375	.375	.340	.340
28	Reo GC-228	T	6-3⅜x4⅛	27.3	78-3200		228.0	6.20	169-1100	N	In	L	Sil	1.78	1.62			.312	.312	.373	.373
29	Reo GC-245	T	6-3½x4¼	29.4	80-3000		245.0	6.20	182-1000	N	In	L	Sil	1.78	1.62			.312	.312	.373	.373
30	Reo GC-288	T	6-3½x5	29.4	88-2800		288.0	6.00	215-900	N	In	L	Sil	1.78	1.62			.312	.312	.373	.373
31	Reo GC-310	T, B	6-3⅝x5	31.5	93-2700		310.0	5.80	234-800	D	In	L	Sil	1.78	1.62			.312	.312	.373	.373
32	Reo GC-361	B	6-4⅛x4½	40.8	106-2800		361.0	6.00	255-1000	D	In	L	Sil	2.06	1.87			.343	.343	.343	.343
33	Reo 6MZR	T	6-4¼x4¾	43.3	95-2300		404.0	5.35	280-750	N	In	L	Sil	1.75	1.25						
34	Reo 6SRKR	T	6-4⅝x5⅛	51.4	126-2300		517.0	5.50	360-600	N	Se	L	Sil	1.87	1.37						
35	Scripps 34	M	4-3¼x4			32-2200	134.0	5.20	92-2000		In	L	Sil	1.48	1.35	1.25	1.12	.250	.250	.310	.310
36	Scripps 36	M	4-3¼x4			50-3200	134.0				In	L	Sil	1.48	1.35	1.25	1.12	.250	.250	.310	.310
37	Scripps F4	M	4-3¾x5			81-3000	220.0	6.10			In	L	Sil	1.93	1.93			.406	.406	.375	.375
38	Scripps 94-95	M	6-3⅜x4⅛			66-2200	221.0	5.85	154-1000		In	L	Sil	1.60	1.39	1.43	1.12	.281	.281	.312	.312
39	Scripps 96-97	M	6-3⅜x4⅛			90-3600	221.0				In	L	Sil	1.60	1.39	1.43	1.12	.281	.281	.312	.312
40	Scripps F6	M	6-3¾x5			120-3000	331.0	6.10			In	L	Sil	1.93	1.93			.406	.406	.375	.375
41	Scripps 104-105	M	6-4x4¼			110-3000	320.0	5.63	204-1000		In	L	Sil	1.75	1.62	1.50	1.37	.322	.322	.373	.373
42	Scripps 152-153	M	6-4¼x5¼			169-3000	447.0	6.20			Se	L	Sil	2.25	2.25			.375	.375	.437	.437
43	Scripps 154, 5, 6, 7	M	6-4¼x5¼			155-3000	447.0	6.20			Se	L	Sil	2.25	2.25			.375	.375	.437	.437
44	Scripps 162-163	M	6-4½x5¾			166-2400	549.0	5.75			Se	L	Sil	2.37	2.28			.405	.375	.437	.437
45	Scripps 166-167	M	6-4½x5¾			145-2200	549.0	5.20			Se	L	Sil	2.56	2.28			.405	.375	.437	.437
46	Scripps 168-169	M	6-4½x5¾			175-2400	549.0	5.75			Se	L	Sil	2.37	2.28			.405	.375	.437	.437
47	Scripps 172A-173A	M	6-4¾x5¾			200-2400	611.0	5.20			Se	L	Sil	2.37	2.28			.405	.375	.437	.437
48	Scripps 176A-177A	M	6-4¾x5¾			155-2200	611.0	5.20			Se	L	Sil	2.56	2.28			.405	.375	.437	.437
49	Scripps 178-179	M	6-4¾x5¾			200-2400	611.0	5.75			Se	L	Sil	2.37	2.28			.405	.375	.437	.437
50	Scripps 202-203	M	6-5x5¾			212-2400	678.0	6.20			Se	L	Sil	2.56	2.28			.405	.375	.437	.437
51	Scripps 206-207	M	6-5x5¾			170-2200	678.0	5.75			Se	L	Sil	2.56	2.28			.405	.375	.437	.437
52	Scripps 208-209	M	6-5x5¾			225-2400	678.0	5.85			Se	L	Sil	2.50	2.37	2.37	2.25	.406	.375	.437	.437
53	Scripps 214-215	M	6-5x5¾			185-2000	678.0	5.75			Se	L	Sil	2.50	2.37	2.37	2.25	.406	.375	.437	.437
54	Scripps V43-V47	M	8-3⅛x3¾			85-3600	221.0	6.16	150-2200		In	L	Sil	1.53	1.53			.296	.296	.312	.312
55	Scripps V43M-V47M	M	8-3.185x3¾			95-3600	239.0	6.15	170-2100		In	L	CNS	1.53	1.53			.292	.292	.311	.311
56	Scripps V61-63-67	M	12-2⅞x3¾			120-3400	292.0	6.70	226-2200		In	L	CNS	1.53	1.53			.292	.292	.311	.311
57	Scripps 302-303	M	12-4¼x5¼			304-2400	894.0	6.20			Se	L	Sil	2.25	2.25			.375	.375	.437	.437
58	Scripps 304-305	M	12-4¼x5¼			250-2400	894.0	6.20			Se	L	Sil	2.25	2.25			.375	.375	.437	.437
59	Scripps 306-307	M	12-4¼x5¼			280-2400	894.0	6.20			Se	L	Sil	2.25	2.25			.375	.375	.437	.437
60	Speedway SW	M	6-4¼x4¾			115-2500	404.6	5.30	265-1100	N	In	L									
61	Speedway S	M	6-4¼x6			100-1800	511.0	5.00	346-1300	N	Se	L	Sil	1.87	1.75	1.62	1.75	.406	.437	.437	.437
62	Speedway MP	M	6-5¾x7			180-1200	1092.0	4.30	780-1000	N	Se	L	Sil	2.78	2.78	2.50	2.50	.562	.562	.531	.531
63	Speedway MC	M	6-5¾x7			260-1800	1092.0	5.00	835-1315	N	Se	L	Sil	2.78	2.78	2.50	2.50	.562	.562	.531	.531
64	Speedway R	M	6-7x8½			300-1200	1963.0	4.20	1480-800	N	Se	I	Sil	2.50	2.50	2.25	2.25	.500	.500	.562	.562
65	Sterling Neptune D2-12	M, Ind	2-5½x7	24.2		15- 500	332.6		158-400	N	Se	L	Sil	2.06	2.06			.375	.375	.437	.437
66	Sterling Petrel L-6	M,T,Tr,B,Ind	6-5¼x6	66.1		115-1200	780.0	4.30	500-1400	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
67	Sterling Petrel L-6	M,T,Tr,B,Ind	6-5¼x6	66.1		145-1500	780.0	4.68	500-1400	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
68	Sterling Petrel L-6	M,T,Tr,B,Ind	6-5¼x6	66.1		145-1500	780.0	4.68	500-1400	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
69	Sterling Petrel L-6-6	M,T,Tr,B,Ind	6-5¼x6	66.1		180-1800	780.0	5.00	500-1400	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
70	Sterling Petrel Reduction-L	M,T,Tr,B,Ind	6-5¼x6	66.1		175-1800	780.0	4.68	500-1400	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
71	Sterling Petrel L-8	M,T,Tr,B,Ind	6-5¼x6	66.1		200-2000	780.0	5.54	500-1400	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
72	Sterling Petrel L-6	M,T,Tr,B,Ind	6-5¼x6	66.1		225-2200	780.0	5.50	500-1400	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
73	Sterling Chevron 6	Tr, M, Ind	6-5½x6¾	72.6		85- 800	962.0		590-1200	N	Se	T	Sil	2.25	2.25			.375	.375	.500	.500
74	Sterling Chevron 6	Tr, M, Ind	6-5½x6¾	72.6		130-1200	962.0		590-1200	N	Se	T	Sil	2.25	2.25			.375	.375	.500	.500
75	Sterling Chevron 6	Tr, M, Ind	6-5½x6¾	72.6		150-1500	962.0		590-1200	N	Se	T	Sil	2.25	2.25			.375	.375	.500	.500
76	Sterling Dolphin-Med. GRM-6	Tr, M, Ind	6-5¾x6¾	79.3		165-1200	1051.6	3.85	785-1200	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
77	Sterling Dolphin 6-GR-6	Tr, M, Ind	6-5¾x6¾	79.3		225-1550	1051.6	4.08	785-1200	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
78	Sterling Dolphin 6-GRS-6	Tr, M, Ind	6-5¾x6¾	79.3		300-2000	1051.6	4.70	785-1200	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
79	Sterling Coast Guard M-6	Tr, M, Ind	6-6¼x7¾	93.7		225-1200	1426.8	4.13	986-1200	W	Se	I	Sil	1.87	1.87			.483	.483	.437	.437
80	Sterling Coast Guard 6-M-6	Tr, M, Ind	6-6¼x7¾	93.7		300-1550	1426.8	4.13	986-1200	W	Se	I	Sil	1.87	1.87			.483	.483	.437	.437
81	Sterling Viking 11 T-6	Tr, M, Ind	6-8x9	153.6		190- 600	2714.3	3.93	1900-1000	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
82	Sterling Viking 11 T-6	Tr, M, Ind	6-8x9	153.6		300- 900	2714.3	4.18	1900-1000	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
83	Sterling Viking 11 T-6	Tr, M, Ind	6-8x9	153.6		425-1200	2714.3	4.18	1900-1000	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
84	Sterling Dolphin-Med. GRM-8	Tr, M, Ind	8-5¾x6¾	105.8		220-1200	1402.2	3.85	1055-1300	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
85	Sterling Dolphin 8-GR-8	Tr, M, Ind	8-5¾x6¾	105.8		300-1550	1402.2	4.08	1055-1300	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
86	Sterling Viking 11 8-T-8	Tr, M, Ind	8-8x9	204.8		250- 600	3619.0	3.93	2520-1050	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
87	Sterling Viking 11 8-T-8	Tr, M, Ind	8-8x9	204.8		400- 900	3619.0	4.18	2520-1050	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
88	Sterling Viking 11 8-T-8	Tr, M, Ind	8-8x9	204.8		565-1200	3619.0	4.18	2520-1050	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
89	Sterling Admiral ‡V-2500-6	M	12-6⅜x6½			1200-2350	2500.0	6.00		W	Se	I	CNS x	2.18	2.21	2.00	2.00	.437	.497	.403	.559
90	Sterling R Admiral V-2500-7	M	12-6⅜x6½			800-2200	2500.0	6.00		W	Se	I	CNS x	2.18	2.21	2.00	2.00	.437	.497	.403	.559
91	Thorobred (10) K	M	1-3¾x4¾	5.62	6-1000	5-1000	52.5	4.00		N	Se	L	NCI	1.62	1.62	1.43	1.43	.300	.300	.375	.375
92	Thorobred KK	M	2-3¾x4¾	11.25	11-1100	10-1100	105.0	4.00	54-800	N	Se	L	NCI	1.62	1.62	1.43	1.43	.300	.300	.375	.375
93	Thorobred Meteor-CK	M	4-2½x3½	10.0	18-2800	17-2400	61.3	5.70	40-1800	N	Se	L	Sil	1.12	.937	1.00	.812	.228	.250	.312	.312
94	Thorobred DS	M	4-2¾x4	12.1	19-1800	16-1800	95.0	4.66	53-1300	N	In	L	Sil	1.46	1.34	1.31	1.18	.250	.250	.312	.312
95	Thorobred Arrowhead, Jr.	M	4-3¼x4	16.9	38-2600	35-2600	133.0	5.58	92-1200	N	In	L	Sil	1.34	1.34	1.18	1.18	.281	.281	.312	.312
96	Thorobred Arrowhead	M	4-3⅝x4½	21.0	40-2200	37-2200	186.0	4.60	121-900	N	In	L	Sil	1.56	1.56	1.37	1.37	.281	.281	.375	.375
97	Thorobred AA	M	4-3¾x4¾	22.5	27-1400	24-1400	210.0	4.00	113-700	N	Se	L	NCI	1.62	1.62	1.43	1.43	.300	.300	.375	.375
98	Thorobred F	M	4-4¼x5	26.4	39-1400	38-1400	259.0	4.00	142-1000	N	Se	L	NCI	1.93	1.93	1.75	1.75	.300	.300	.375	.375
99	Thorobred B	M	4-4½x5	32.4	47-1800	44-1800	318.0	4.00	180-900	N	Se	L	CNS	2.09	2.09	1.93	1.93	.300	.300	.375	.375

(For abbreviations see pages 250-251)

Engines—*Continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT										CARBURETOR			OVERALL DIMENSIONS (In.)			
Seats														MAIN BEARINGS													
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Front End Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Spark Plug—Thread Size	Make	Size	Engine Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Line Number
30	E	Nif	HG	Al	59	1.31x3.56	5	4130	10½	75	1025	Y	2.75x1.71	7	3.50x1.68	3.50x2.28	abcfg	14 mm	Str	1¾	1488	27⅛	46	50⅛	1
30	E	Nif	HG	Al	54	1.12x3.62	4	4130	12½	83	1025	Y	2.50x1.81	7	3.00x2.25	3.00x3.12	abcf	18 mm	Str	1¾	1199	27¼	41	50⅛	2
30	E	Nif	HG	Al	66	1.31x3.81	5	4130	10½	75	1025	Y	2.75x1.71	7	3.50x1.68	3.50x2.56	abcfg	14 mm	Str	1¾	1492	27⅞	46	50⅛	3
30	E	Nif	HG	Al	62	1.12x3.87	5	4130	12½	83	1025	Y	2.50x1.81	7	3.00x2.25	3.00x3.12	abcef	18 mm	Str	1¾	1209	27¼	41	50⅛	4
30	E	Nir	HG	Al	63	1.12x4.12	5	4130	12½	83	1025	Y	2.50x1.81	7	3.00x2.25	3.00x3.12	abc	18 mm	Str	1¾	1214	27¼	41	50⅛	5
30	E	Nif	HG	Al	68	1.43x3.78	5	4130	11¼	100	1025	Y	3.00x2.09	7	3.50x1.68	3.50x2.37	abcfg	14 mm	Str	2	1687	30½	47¼	53⅜	6
30	E	Nif	HG	Al	83	1.43x4.15	5	4130	11¼	100	1025	Y	3.00x2.09	7	3.50x1.68	3.50x2.37	abcfg	14 mm	Str	2	1700	30½	47¼	53⅜	7
30	E	Nif	HG	Al	95	1.43x4.40	5	4130	11¼	100	1025	Y	3.00x2.09	7	3.50x1.68	3.50x2.37	abcfg	14 mm	Str	2	1710	30½	47¼	53⅜	8
45	E	CNM	HG	CI	56	1.00x3.00	4	1040	9	54	1045	N	2.62x1.28	2	SAE212(9)	3.00x2.18	abet	14 mm	Sch	1	640	18½	36½	34	9
45	E	CNM	HG	CI	54	1.00x3.00	4	1040	9	54	1045	N	2.62x1.28	2	BCA3I3(9)	BCA3I4(9)	bet	14 mm	Sch	1	650	18½	36½	34	10
45	E	CNM	HG	CI	80	1.25x3.87	4	1040	10	97	1045	N	2.57x2.21	3	2.90x2.18	2.90x3.50	abceg	⅞–18	Sch	1	1140	29¼	41½	41½	11
45	E	CNM	HG	CI	104	1.25x3.87	4	1040	12	116	1045	N	2.37x2.87	3	2.25x2.96	2.75x4.00	abceg	⅞–18	Sch	1¼	1200	24½	57½	45	12
45	E	CNM	HG	CI	522	2.18x6.68	4	1045	20½	656	1045	N	3.50x4.37	5	3.50x5.21	3.50x6.37	abcdeg	⅞–18	Zen	2	4600	38½	68¼	72	13
45	E	CNM	HG	CI	572	2.18x7.18	4	1045	20½	656	1045	N	3.50x4.37	5	3.50x5.21	3.50x6.37	abcdeg	⅞–18	Zen	2	4650	38½	68¼	72	14
45	E	CNM	HG	CI	598	2.18x7.18	4	1045	20½	656	1045	N	3.50x4.37	5	3.50x5.21	3.50x6.37	abcdeg	⅞–18	Zen	2	4700	38½	68¼	72	15
45	E	CNM	HG	CI	80	1.25x3.87	4	1040	10	97	1045	Y	2.57x2.21	4	2.90x2.18	2.90x3.50	abceg	⅞–18	Zen	1½	1970	28⅜	45⅛	59¼	16
45	E	CNM	HG	CI	104	1.25x4.25	4	1045	11½	97	1045	Y	2.75x2.09	4	2.93x2.18	2.93x3.50	abceg	⅞–18	Zen	1½	2000	28⅜	48⅛	59¼	17
45	E	CNM	HG	CI	522	2.18x6.68	4	1045	20½	624	1045	N	3.81x4.25	7	4.00x5.21	4.00x6.37	abdeg	⅞–18	Zen(2)	1¾	6500	37½	74	97	18
45	E	CNM	HG	CI	568	2.18x7.18	4	1045	20½	624	1045	N	3.81x4.25	7	4.00x5.21	4.00x6.37	abcdeg	⅞–18	Zen(2)	1¾	6600	37½	74	97	19
45	E	CNM	HG	CI	598	2.18x7.18	4	1045	20½	624	1045	N	3.81x4.25	7	4.00x5.21	4.00x6.37	abcdeg	⅞–18	Zen(2)	1¾		37½	74	97	20
30	N		HG	Al		1.37x4.50	6	3135	15½	180	CNS	N	2.56x3.16	5	2.56x3.48	2.56x4.25	abcde	18 mm	Sho(2)	2	2950	32⅝	54⅞	78⅞	21
30	N		HG	Al	182	1.25x6.18	5	3135	17⅛	212	CNS	N	2.56x3.16	5	2.56x3.48	2.56x4.25	abcde	18 mm	Hol	1½	2450	32⅝	49½	78⅞	22
30	N		HG	Al	140	1.37x5.62	5	3135	15½	184	CNS	N	2.56x3.15	7	2.56x1.50	2.56x4.25	abcde	18 mm	Str	2	2400	27⅞	51⅞	96¼	23
30	N		HG	Al		1.37x4.50	6	3135	15½	180	CNS	N	2.56x3.16	7	2.56x3.48	2.56x4.25	abcde	18 mm	Sho(3)	2	3800	32⅝	54⅞	99⅞	24
30	N		HG	Al	182	1.25x6.18	5	3135	17⅛	212	CNS	N	2.56x3.16	7	2.56x3.48	2.56x4.25	abcde	18 mm	Zen(2)	1½	3050	32⅝	49½	98⅞	25
30	N		HG	Al		1.37x4.50	6	3135	15½	180	CNS	N	2.56x3.16	7	2.56x3.48	2.56x4.25	abcde	18 mm	Sho(3)	2½	4050	35	52¼	98⅞	26
45	E	SA	Ch	Al	19	.859x2.62	4	MS	7⅛			Y	1.93x1.00	4	2.25x1.23	2.25x1.87	abc	14 mm	Car	1½					27
45	E		Ch	Al	23	.983x2.90	4	1035	10½	50	1045	Y	2.19x1.50	7	2.62x1.94	2.62x2.47	abcde	14 mm	Zen	1¼	758*	19¼	30¼	36¾	28
45	E		Ch	Al	26	.983x3.03	4	1035	10½	50	1045	Y	2.19x1.50	7	2.62x1.94	2.62x2.47	abcde	14 mm	Zen	1¼	763*	19¼	30¼	38¾	29
45	E		Ch	Al	26	.983x3.03	4	1035	10½	50	1045	Y	2.19x1.50	7	2.62x1.94	2.62x2.47	abcde	14 mm	Zen	1½	785*	19¼	30⅝	38¾	30
45	E		Ch	Al	29	.983x3.13	4	1035	10½	50	1045	Y	2.19x1.50	7	2.62x1.94	2.62x2.47	abcde	14 mm	Zen	1½	785*	19¼	30⅝	38¾	31
30	E		Ch	Al	26	1.25x3.43	4	1035	9	48	1050	Y	2.37x1.56	7	2.62x1.71	2.62x2.50	abcde	14 mm	Zen	1½		19½	31	41¼	32
	E		HG	Al	48	1.00x4.00	4	1045	8¾	48	1045	N	2.25x1.50	7	2.62x1.62	2.62x2.75	abcde	18 mm	Zen	1½	920	23½	33⅝	45¾	33
	N		HG	Al	70	1.37x4.25	4	1045	10¼	83	1045	N	2.75x1.75	7	3.00x1.87	3.00x3.00	abcde	18 mm	Zen	1¾	1225	25½	38⅛	44⅛	34
30			HG	CI	29	.750x2.81	3	3140	6⅞	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abr	⅞–18	Zen	1¼	410*	15½	21¾	32⅛	35
30			HG	Al		.750x2.81	3	AS	6⅞	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abr	⅞–18	Zen	1¼	410*	15½	21¾	32⅛	36
45			HG	Al	33	1.12x3.25	4	Dur	10½	41	NS	N	2.18x1.87	3	2.25x2.62	2.25x2.62	abc	18 mm	Str	1¼	660*	23	28⅛	45¼	37
30			HG	Al		.875x2.90	4	CS	7	26	CS4	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abr	14 mm	Zen	1½	675*	21	23¼	41½	38
30			HG	Al		.875x2.90	4	CS	7	26	CS4	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abr	14 mm	Zen	1½	675*	21	23¼	41½	39
45			HG	Al	33	1.12x3.25	4	Dur	10½	41	NS	Y	2.18x1.87	4	2.25x2.62	2.25x2.62	abc	18 mm	Zen	1½	900*	19¾	28⅛	56½	40
45			HG	Al	40	1.00x3.51	4	1035	8	37	1045	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abr	⅞–18	Zen	1¾	860*	21	26½	49¾	41
45	E	Tun	HG	Al	49	1.25x3.68	4	AS	10⅞	70	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	abc	18 mm	Hol	2	1050*	27¾	32⅞	56¾	42
45	E	Tun	HG	Al	49	1.25x3.68	4	AS	10⅞	70	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	abc	18 mm	Str	2	1150*	24¾	29⅞	56¾	43
45			HG	Al	50	1.37x3.84	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Hol	1½	1325*	26¼	36⅞	66	44
45			HG	Al	50	1.37x3.84	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Sch	1½	1420*	33½	33⅛	66	45
45			HG	Al	50	1.37x3.84	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Zen	2	1325*	33½	33⅛	66	46
45			HG	Al	56	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Hol	2	1325*	26¼	37⅞	66	47
45			HG	Al	56	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Sch	1½	1420*	33½	33⅛	66	48
45			HG	Al	56	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Hol	2	1325*	33½	33⅛	66	49
45			HG	Al	62	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Hol	2	1325*	26¼	37⅞	66	50
45			HG	Al	62	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Sch	1½	1420*	33½	33⅛	66	51
45			HG	Al	56	1.37x4.00	4	AS	11¼	85	CS	Y	2.87x2.25	4	3.00x3.00	3.00x3.62	abr	18 mm	Zen(2)	2	1325*	25	33⅛	66	52
45			HG	Al	56	1.37x4.00	4	AS	11¼	85	CS	Y	2.87x2.25	4	3.00x3.00	3.00x3.62	abr	18 mm	Zen(2)	2	1450*	25	33⅛	66	53
45	Bo	Tun	HG	Al		.750x2.84	3	AS	7	17	CS	Y	2.00x1.75	3	2.50x1.37	2.00x1.96	abc	18 mm	Str(2)	1	660*	23½	32⅝	42⅝	54
45	Bo	Tun	HG	CAS		.750x2.84	3	DFS	7	18	CAS	Y	2.14x1.75	3	2.50x1.37	2.00x1.96	abc	14 mm	Hol	1	700*	23½	32⅞	43⅛	55
45	Bo	Tun	HG	CAS	15	.750x2.48	3	DFS	7⅛	22	CAS	Y	2.12x1.57	4	2.40x1.83	2.40x2.25	abc	14 mm	Str	1		25⅜	31⅞	49⅛	56
45			HG	Al	49	1.25x3.68	4	AS	10⅞	164	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	abc	18 mm	Hol	2	1700*	35	33½	58½	57
45			HG	Al	49	1.25x3.68	4	AS	10⅞	164	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	abc	18 mm	Str(2)	2	1700*	33¼	30⅛	58½	58
45			HG	Al	49	1.25x3.68	4	AS	10⅞	164	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	abc	18 mm	Str(2)	2	1700*	33¼	30⅛	58½	59
			HG	Al								Y					abcde	14 mm	Str	1¾	1150*	23⅜	17¾	54⅛	60
45	N		HG	CI		1.18x4.00	4		13½				2.75x2.12	7	2.75x2.12	2.75x2.12	abde	⅞–18	Str	1½	1250*	22⅛	24	72⅝	61
45	N		HG	CI		1.37x5.31	4		15½			N	2.62x3.00	7	2.62x3.00	2.62x3.00	abde	⅞–18	Str	2	2025*	29⅝	28⅞	88⅝	62
45	N		HG	Al		1.37x5.37	6		15½			Y	2.62x3.00	7	2.62x3.00	2.62x3.00	abde	⅞–18	Str	2	2100*	29⅜	28⅞	88⅝	63
45	N		HG	CI		1.87x5.50	4		19			N	3.50x4.12	7	3.50x4.12	3.50x4.12	abde	⅞–18	Str	2	4000*	35	42	111¼	64
45			HG	CI	140	1.25x5.12	4	CS	12½	96	CNS	Y	2.25x2.62	3	2.25x4.62	2.25x4.75	Splash	½	Sch	1½	1100	24	36½	53⅛	65
45			HG	Al	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞–18	Zen(2)	1½	1400	27½	33½	71¾	66
45			HG	Al	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞–18	Zen(2)	1½	1400	27½	33½	71¾	67
45			HG	Al	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞–18	Zen(2)	1½	1850	27½	33½	71¾	68
45			HG	Al	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞–18	Zen(2)	1¾	1400	27½	33½	71¾	69
45			HG	Al	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞–18	Zen(2)	1½	2000	27½	23	81⅛	70
45			HG	Al	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞–18	Zen(2)	1¾	2000	27½	33½	71¾	71
45			HG	Al	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞–18	Zen(2)	1½	2000	27½	33½	71¾	72
45			HG	CI	140	1.25x5.12	5	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞–18	Zen(2)	1¾	2000	30½	36¼	87½	73
45			HG	CI	140	1.25x5.12	5	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞–18	Zen(2)	1¾	2000	30½	36¼	87½	74
45			HG	CI	140	1.25x5.12	5	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞–18	Zen(2)	1¾	2000	30½	36¼	87½	75
60			HG	Al	100	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞–18	Zen(2)	1¾	2250	30½	45⅛	87½	76
60			HG	Al	100	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞–18	Zen(2)	1¾	2000	30½	45⅛	87½	77
60			HG	Al	110	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞–18	Zen(2)	1¾	2175	30½	45⅛	87½	78
60			HG	Al	125	1.50x5.37	4	CS	14½	224	CNS	Y	3.00x3.12	7	3.25x2.62	3.25x3.68	abcdef	⅞–18	SZ(2)	2½	4000	31	49¼	102	79
60			HG	Al	129	1.50x5.37	4	CS	14½	224	CNS	Y	3.00x3.12	7	3.25x2.62	3.25x.369	abcdef	⅞–18	SZ(2)	2½	3400	31	49¼	102	80
45			HG	Al	280	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	7	4.00x3.37	4.00x5.50	abcdef	⅞–18	Zen(3)	2½	7100	40½	72⅜	121⅝	81
45			HG	Al	290	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	7	4.00x3.37	4.00x5.50	abcdef	⅞–18	Zen(3)	2½	7100	40½	72⅜	121⅝	82
45			HG	Al	290	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	7	4.00x3.37	4.00x5.50	abcdef	⅞–18	Zen(3)	2½	7100	40½	72⅜	121⅝	83
60			HG	Al	100	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	5	2.50x4.43	2.50x4.43	abcdef	⅞–18	Zen(2)	2½	3400	30½	45⅛	104⅛	84
60			HG	Al	100	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	5	2.50x4.43	2.50x4.43	abcdef	⅞–18	Zen(2)	2½	3400	30½	45⅛	104⅛	85
45			HG	Al	280	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdef	⅞–18	Zen(4)	2½	9000	40½	72⅜	142⅝	86
45			HG	Al	290	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdef	⅞–18	Zen(4)	2½	9000	40½	72⅜	142⅝	87
45			HG	Al	290	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdef	⅞–18	Zen(4)	2½	9000	40½	72⅜	142⅝	88
45	Bo	JM	HG	Al	96	1.62x5.90	6	4340	‡‡	48	4140	Y	3.50x2.87	7	4.00x3.00	4.00x3.00	abce	⅝–24	Str		4200	50	50	108⅝	89
45	Bo	JM	HG	Al	96	1.62x5.90	6	4340	‡‡	48	4140	Y	3.50x2.87	7	4.00x3.00	4.00x3.00	abce	⅝–24	Str		3950	50	50	108⅝	90
45	N		HG	CIA	64	1.10x3.25	3	1045	8½	43	1045	N	1.50x2.12	2	1.50x3.00	1.50x3.00	Splash	⅞–18	Str	¾	210	19¼	22⅛	21⅝	91
45	N		HG	CIA	64	1.10x3.25	3	1045	8½	43	1045	N	1.50x2.12	2	1.50x3.00	1.50x3.00	Splash	⅞–18	Str	1	415	19½	22⅛	36¼	92
45	N		HG	Al	9	.625x2.12	3	1045	6	14	1045	N	1.43x1.25	2(9)	ND1207	ND1207	ace	14 mm	Str	¾	240	18¼	19⅛	27⅞	93
45	N		HG	CIA	19	.625x2.40	3	1045	8	27	1045	N	1.75x1.50	2	1.78x2.81	1.73x2.87	abe	⅞–18	Str	1	330	15⅞	21⅛	39⅛	94
45	N		HG	CI	30	.875x2.62	3	1045	7¼	29	1045	N	1.75x1.25	3	2.12x1.43	2.12x1.18	abcde	18 mm	Str	1	490	21⅜	24⅛	35	95
45	N		HG	CI	45	1.10x3.06	4	1045	8¾	46	1045	N	2.00x1.50	3	2.00x2.50	2.00x1.87	abcde	⅞–18	Str	1	610	19⅛	26¼	41	96
45	N		HG	CIA	64	1.10x3.25	3	1045	8½	43	1045	N	1.50x2.12	3	1.50x3.00	1.50x3.00	abe	⅞–18	Str	1	620	19½	22⅛	46⅜	97
45	N		HG	CIA	69	1.10x3.56	4	1045	10⅜	66	1045	N	2.00x2.25	3	2.00x4.18	2.00x3.50	abe	⅞–18	Str	1¼	830	20¼	26¼	54⅜	98
45	N		HG	CIA	89	1.10x3.93	4	1045	10⅜	66	1045	N	2.00x2.25	3	2.00x4.18	2.00x3.50	abe	⅞–18	Str	1½	830	20¼	26¼	54⅜	99

(For abbreviations see pages 250-251)

American Gasoline

Line Number	ENGINE MAKE AND MODEL	Designed for	Number or Cylinders, Bore and Stroke (In.)	Rated or Tax Hp.	MAXIMUM BRAKE Hp.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.)	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
					With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
														Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Thorobred	BB-4	M	4-4½x6	32.4	59-1600	56-1600	382.0	4.00	224-1100	N	Se	L	Sil	2.34	2.34	2.12	2.12	.300	.300	.437	.437
2	Thorobred	BC-4	M	4-5x7	40.0	60-1200	56-1200	550.0	4.00	292-900	N	Se	L	Dia	2.75	2.75	2.37	2.37	.375	.375	.625	.625
3	Thorobred	BCS-4	M	4-5¼x7	52.9	75-1100	71-1100	727.0	4.00	409-900	N	Se	L	Dia	2.75	2.75	2.37	2.37	.375	.375	.625	.625
4	Thorobred	BC-Super-4	M	4-6x7	57.6	82-1100	78-1100	791.7	4.00	465-700	N	Se	L	Dia	2.75	2.75	2.37	2.37	.375	.375	.625	.625
5	Thorobred	Hiawatha	M	6-3¼x4¼	33.8	85-2800	82-2800	282.0	5.70	185-1100	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
6	Thorobred	Arrow-Super-6	M	6-4¼x4¼	41.0	98-2500	95-2500	404.0	5.38	286-800	N	In	L	Sil	1.93	1.43	1.75	1.25	.375	.375	.375	.375
7	Thorobred	BB-6	M	6-4½x6	48.6	84-1725	80-1725	572.5	4.00	379-900	N	Se	L	Sil	2.34	2.34	2.12	2.12	.300	.300	.437	.437
8	Thorobred	BBS-6	M	6-5x6	60.0	105-1500	101-1500	707.0	4.00	420-900	N	Se	L	Sil	2.34	2.34	2.12	2.12	.300	.300	.437	.437
9	Thorobred	BC-6	M	6-5x7	60.0	94-1100	90-1100	825.0	4.00	452-1000	N	Se	L	Dia	2.75	2.75	2.37	2.37	.375	.375	.625	.625
10	Thorobred	BCS-6	M	6-5¾x7	79.0	118-1100	112-1100	1091.0	4.00	596-850	N	Se	L	Dia	2.75	2.75	2.37	2.37	.375	.375	.625	.625
11	Thorobred	BC-Super-6	M	6-6x7	86.4	128-1100	124-1100	1187.5	4.00	630-875	N	Se	L	Dia	2.75	2.75	2.37	2.37	.375	.375	.625	.625
12	Universal	Fisherman-WM	M	1-4⅜x4½			8-1200	67.6	4.60		N	In	L	CNS	1.87	1.87			.250	.250	.375	.375
13	Universal	Blue Jacket-AFTL	M	2-3x3½			12-2200	49.5	5.75		N	In	L	CNS	1.50	1.50			.250	.250	.375	.375
14	Universal	Utility Four-BN	M	4-2¾x4			25-2500	95.0	5.00		N	In	L	CNS	1.12	1.12			.234	.234	.312	.312
15	Universal	Flexifour-FA	M	4-3x3½			40-3500	99.0	5.00		N	In	L	Sil	1.50	1.50			.312	.312	.375	.375
16	Universal	Superfour-LSG	M	4-3¼x4½			50-3000	149.3	5.70		N	Se	L	CNS	1.37	1.37			.312	.312	.375	.375
17	Universal	American Six-AMS	M	6-3x3½			60-3500	148.5	6.00		N	In	L	Sil	1.50	1.50			.312	.312	.375	.375
18	Universal	Cruiser Six-HCS	M	6-3⅛x4½			90-3000	260.0	5.75		N	Se	L	Sil	1.50	1.50			.312	.312	.375	.375
19	Universal	Sea Lion Six-LHS	M	6-3½x4½			110-3400	280.0	5.75		N	Se	L	Sil	1.50	1.50			.312	.312	.375	.375
20	Universal	Cruiser Eight-GCE	M	8-3½x4½			125-3000	347.0	5.75		N	Se	L	Sil	1.50	1.50			.328	.328	.375	.375
21	Universal	Sea Lion Eight-LCE	M	8-3½x4½			141-3400	347.0	5.75		N	Se	L	Sil	1.50	1.50			.328	.328	.375	.375
22	Vimalert	M-12	M	12-5x7			420-2000	1650.0	6.25	1286-1400	N	Se	I	Sil	2.73	2.59	2.25	2.25	.437	.375	.435	.435
23	Vimalert	Duplex Unit	M	Note—Unit	is	compose	d of two	Mode	l M-1	2 Engines	Pla	ced	end	to end	, with	a gea	r box	betw	een,	drivi	ng on	e
24	Vimalert	‡V-2500-2	M	12-5⅜x6½			1200-2300	2500.0	5.80		W	Se	I	CNS	2.20	2.21	1.95	1.98	.500	.500	.403	.559
25	Waukesha	(H) 150	C, Ind	2-3x2¾	7.2	12-3200	11-3200	39.0	5.60	20-2400	N	In	L	Sil	1.37	1.12	1.25	1.00	.300	.300	.312	.312
26	Waukesha	ICK	M, Ind	4-2½x3⅛	10.0	18-2600	14-2200	61.3	5.70	40-1700	N	In	L	Sil	1.12	.937	1.00	.812	.228	.250	.312	.312
27	Waukesha	FCS	Tr, Ind	4-2¾x4	12.1	26-2600	17-1800	94.0	4.85	68-1000	N	In	L	Sil	1.34	1.34	1.18	1.18	.281	.281	.312	.312
28	Waukesha	FC	T, Tr, Ind	4-3¼x4	16.9	35-2600	25-1800	133.0	5.58	91-1225	N	In	L	Sil	1.34	1.34	1.18	1.18	.281	.231	.312	.312
29	Waukesha	160	Ind	4-3⅜x3½	17.6	27-1800		120.5	6.00	85-1200	W	In	I	Sil	1.18	1.12	1.06	1.00	.281	.281	.375	.375
30	Waukesha	XAH	T, Ind	4-3⅝x4½	21.0	42-2200	33-1800	186.0	5.50	128-900	N	In	L	Sil	1.56	1.56	1.37	1.37	.281	.281	.375	.375
31	Waukesha	130GS	T, Tr, Ind	4-3¾x5	22.5	59-2200	36-1500	221.0	6.12	144-800	W	In	I	Sil	1.84	1.40	1.62	1.25	.445	.453	.434	.434
32	Waukesha	130GL	T, Tr, Ind	4-4x5	25.6	58-2200	41-1500	251.0	5.95	164-800	W	In	I	Sil	1.84	1.40	1.62	1.25	.445	.453	.434	.434
33	Waukesha	VIM	Tr, Ind	4-4¼x5½	28.9	52-1600	45-1400	298.0	4.23	200-1000	W	In	I	Sil	2.00	1.75	1.75	1.50	.400	.400	.375	.375
34	Waukesha	VIK	Tr, Ind	4-4½x5¼	32.4	58-1600	50-1400	334.0	4.30	224-900	W	In	I	Sil	2.00	2.00	1.75	1.75	.400	.400	.375	.375
35	Waukesha	VRZG	T, Tr, Ind	4-4⅝x5¼	34.2	64-1600	56-1400	353.0	6.10	241-1100	W	In	I	Sil	2.00	1.75	1.75	1.50	.450	.450	.375	.375
36	Waukesha	CHK	Tr, Ind	4-5¼x6¼	42.0	79-1400	67-1050	516.0	4.20	375-700	W	In	I	Sil	2.37	2.37	2.12	2.12	.437	.437	.437	.437
37	Waukesha	6BL	T, B, Ind	6-3½x4¼	29.4	72-2800	51-2000	245.0	5.70	165-1300	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
38	Waukesha	6BM	T, B, Ind	6-3⅝x4¼	31.5	77-2800	54-2000	263.0	5.70	178-1100	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
39	Waukesha	6BK	T, B, Ind	6-3¾x4¼	33.8	82-2800	59-2000	282.0	5.70	189-1100	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
40	Waukesha	6BZ	T, B, Ind	6-4x4¼	38.4	86-2800	65-2000	320.0	5.75	210-1000	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
41	Waukesha	6MKR	T, B, Ind	6-4⅛x4¾	40.8	98-2500	61-1600	381.0	5.34	270-800	N	In	L	Sil	1.93	1.43	1.75	1.25	.375	.375	.375	.375
42	Waukesha	6MZR	T, B, Ind	6-4¼x4¾	43.3	106-2500	66-1600	404.0	5.38	286-800	N	In	L	Sil	1.93	1.43	1.75	1.25	.375	.375	.375	.375
43	Waukesha	140-GS	T, B, Ind	6-4¼x5½	43.3	122-2250	91-1500	468.0	5.80	382-1000	W	In	I	Sil	2.12	1.56	1.87	1.37	.531	.469	.434	.434
44	Waukesha	6SRLR	T, B, Ind	6-4⅝x5⅛	45.9	112-2250	72-1500	482.0	5.50	330-800	N	Se	L	Sil	1.90	1.65	1.56	1.37	.386	.375	.375	.375
45	Waukesha	140-GK	T, B, Ind	6-4½x5½	48.6	136-2250	104-1500	525.0	5.80	403-1000	W	In	I	Sil	2.12	1.56	1.87	1.37	.531	.469	.434	.434
46	Waukesha	6SRKR	T, B, Ind	6-4⅝x5⅛	51.3	125-2250	82-1500	517.0	5.50	369-600	N	Se	L	Sil	1.90	1.65	1.56	1.37	.386	.375	.375	.375
47	Waukesha	145-GS	T, B, Ind	6-4¾x6	54.2	133-2000	111-1400	638.0	5.60	472-600	W	In	I	Sil	2.12	1.62	1.87	1.37	.594	.531	.495	.495
48	Waukesha	6GAL	T, B, Ind	6-5x5½	60.0	136-2000	109-1400	648.0	5.00	462-750	D	In	I	Sil	2.21	1.75	2.00	1.50	.500	.500	.437	.437
49	Waukesha	6RBR	T, B	6-5x5¾	60.0	150-2000		677.0	5.35	492-800	N	Se	L	Sil	2.40	2.40	2.12	2.12	.400	.400	.437	.437
50	Waukesha	145-GK	T, B, M, Ind	6-5¼x6	66.2	162-2000	136-1400	779.0	5.60	577-600	W	In	I	Sil	2.12	1.62	1.87	1.37	.594	.531	.495	.495
51	Waukesha	6GAK	T, B, Ind	6-5½x5½	72.5	155-2200	131-1400	784.0	4.80	545-900	D	In	I	Sil	2.21	1.75	2.00	1.50	.500	.500	.437	.437
52	Waukesha	6WAL	T, B	6-5¾x6½	79.5	200-1800	161-1300	1013.0	5.00	686-700	W	In	I	Sil	2.65	2.22	2.43	2.00	.656	.656	.500	.500
53	Waukesha	6WAK	T, B, M, Ind	6-6¼x6½	93.7	235-1800	193-1300	1197.0	5.20	811-700	W	In	I	Sil	2.65	2.22	2.37	2.00	.656	.656	.500	.500
54	Waukesha	6EL	Ind	6-6½x7	101.4	165-1125	144-1050	1395.0	4.00	1000-550	W	In	I	Sil	2.75	2.50	2.50	2.25	.718	.718	.562	.562
55	Waukesha	6EK	Ind	6-7x7	117.6	190-1125	166-1050	1616.0	4.00	1120-550	W	In	I	Sil	2.75	2.50	2.50	2.25	.718	.718	.562	.562
56	Waukesha	6NK	Ind	6-7x8½	117.6	221-1050	196- 950	1962.0	5.50	1330-600	W	In	I	Sil	2.75	2.50	2.50	2.25	.718	.718	.562	.562
57	Waukesha	6LRO	Ind	6-8¼x8½	173.4	337-1050	300- 900	2894.0	3.80	1870-700	N	Se	I	Sil	3.50	3.00	3.25	2.75	.750	.840	.562	.562
58	White	100A	T, B	6-3⅞x4½	28.4	90-2800		250.0	6.75	185-1200	N	In	L	AUS	1.65	1.62	1.43	1.50	.381	.381	.375	.375
59	White	110A	T, B	6-3⅞x4½	30.5	100-2600		270.0	6.50	200-1300	N	In	L	AUS	1.65	1.62	1.43	1.50	.381	.381	.375	.375
60	White	120A	T, B	6-3⅞x4½	36.0	110-2600		318.0	6.40	250-1000	N	In	L	AUS	1.65	1.62	1.43	1.50	.381	.381	.375	.437
61	White	140A	T, B	6-3⅞x5⅛	36.0	125-2600		362.0	6.28	285-1100	N	In	L	AUS	1.65	1.62	1.75	1.50	.381	.381	.375	.437
62	White	(H) 140TA	B	6-3⅞x5⅛	36.0		125-2800	362.0	6.28	185-1200	N	In	L	AUS°x			1.75	1.50	.375	.381		
63	White	(H) 24A	B	12-4½x4¼	81.7		209-2600	681.0	6.10	500-1200	D	In	L	AUS°			1.62	1.62	.375	.375		
64	Willys	441	C, T	4-3⅛x4⅜	15.6		63-3900	134.2	6.48	108-1800	N	In	L	CNS	1.53	1.46	1.34	1.28	.359	.359	.373	.373
65	Wisconsin	AA	M, Ind	1-2¼x2¾	2.0	1.8-2600	1.8-2600	10.9	4.40	4.2-2000	N	In	L	AUS	1.12	1.12	.875	.875	.187	.187	.310	.310
66	Wisconsin	AB	Ind	1-2½x2¾	2.5	3-2600	3-2600	13.5	4.40	6.8-1800	N	In	L	AUS	1.12	1.12	.875	.875	.187	.187	.310	.310
67	Wisconsin	AD	Ind	1-2¾x3¼	3.0	4.3-2300	4.3-2600	19.3	4.20	10-1600	N	Se	L	Sil	1.31	1.31	.687	.875	.275	.275	.310	.310
68	Wisconsin	AK	Ind	1-2⅞x2¾	3.3	4.2-2400	4.2-2400	17.8	4.59	9.5-1700	N	In	L	AUS	1.12	1.12	.937	.937	.187	.187	.310	.310
69	Wisconsin	AE	M, Tr, Ind	1-3x3¼	3.6	4.7-2400	4.7-2400	22.9	4.13	11.8-1600	N	Se	L	Sil	1.31	1.31	.687	.875	.275	.275	.310	.310
70	Wisconsin	AF	M, Tr, Ind	1-3¼x4	4.2	5.4-2000	5.4-2000	33.1	3.71	16.9-1200	N	Se	L	Sil	1.56	1.56	.812	1.25	.275	.275	.310	.310
71	Wisconsin	AG	M, Tr, Ind	1-3½x4	4.9	6.2-2000	6.2-2000	38.5	3.72	19.6-1200	N	Se	L	Sil	1.56	1.56	.812	1.25	.275	.275	.310	.310
72	Wisconsin	AH	M, Tr, Ind	1-3⅝x4	5.2	8.2-2200	8.2-2200	41.3	4.18	23.7-1400	N	Se	L	Sil	1.56	1.56	.812	1.25	.275	.275	.310	.310
73	Wisconsin	AC-4	M, Tr, Ind	4-2⅝x3¼	11.0	16-2600	16-2600	70.4	4.60	39.5-1600	N	Se	I	Sil	1.12	1.12	.937	.937	.232	.232	.310	.310
74	Wisconsin	VE-4	Tr, Ind	4-3x3¼	14.4	22-2600	22-2600	91.9	4.60	50-1700	N	Se	L	CNS	1.31	1.31	1.12	1.12	.275	.275	.310	.310
75	Wisconsin	AM-4	Tr, Ind	4-3¼x4	16.9	25-2200	25-2200	132.0	4.56	79-1300	N	Se	I	Sil	1.50	1.37	1.12	1.12	.276	.256	.310	.310
76	Wisconsin	AP-4	Tr, Ind	4-3½x4	19.5	32-2100	32-2100	154.0	4.60	94-1100	N	Se	I	Sil	1.50	1.37	1.12	1.12	.276	.256	.310	.310
77	Wisconsin	L-2	T, Tr, Ind	6-3⅞x5	36.0	62-1800		354.0	4.27	236-700	N	In	I	Sil	2.00	2.00	1.75	1.75	.379	.379	.434	.434
78	Wisconsin	L-3	T, Tr, Ind	6-4⅛x5	40.7	68-1800		401.0	4.30	260-700	N	In	I	AUS	2.00	2.00	1.62	1.62	.379	.379	.434	.434
79	Wisconsin	L-4	T, Tr, Ind	6-4¼x5	43.4	71-1800		426.0	4.26	280-700	N	In	I	AUS	2.00	2.00	1.62	1.62	.379	.379	.434	.434
80	Wisconsin	ZA-1	Tr, Ind	6-4½x5	48.6	78-1600		477.0	4.50	322-800	N	Se	I	Sil	2.25	2.25	2.06	2.06	.450	.450	.437	.437
81	Wisconsin	ZA-2	T, Tr, Ind	6-4⅝x5	51.4	82-1600		504.0	4.88	340-750	N	In	I	AUS	2.25	2.25	1.56	1.56	.450	.450	.434	.434

ABBREVIATIONS

§—Used in Bus engines; no liners used in truck engines
°—Stellite faced
*—Weight complete with ignition and carburetor
**—Pressure also to Camshaft thrust bearing
■—Also available in reduction gear models
•—Also available in R.H. rotation
‡—Tocco hardened
♣—Weight per pair
†—Rated with generator and water pump, but no fan or muffler
††—1500 lbs. for model 179; model 178 includes reduction gear and weighs 1905 lbs. complete

‡—Super-Charged engine
‡‡—8¾ in. for link rod; 12 in. for master rod
(1)—6.15 ratio for Cars, 5.87 for heavy duty truck engine
(2)—Two used
(3)—Three used
(4)—Four used
(5)—157 ft. lb. torque at 2200 for cars; 150 ft. lb. at 2000 for heavy duty truck engine
(6)—41¾ in. for 178 model; 36⅞ in. for 179 model
(7)—76⅞ in. for 178 model; 62⅝ in. for 179 model
(8)—Minneapolis Moline Power Implement Co.
(9)—Roller Bearings
(10)—Red Wing Motor Co.
a—Main Bearings
(aa)—Forked rod, 88 ox.; Plain Rod, 50 ox.
Al—Aluminum Alloy
Ala—Aluminum Alloy, Anodized
Als—Aluminum Alloy with Steel Strut
AS—Alloy Steel
AUS—Austenitic Steel
b—Connecting Rods
B—Buses
BG—Bevel Gear
Bo—Used in both Intake and Exhaust seats
c—Camshaft Bearings
C—Cars

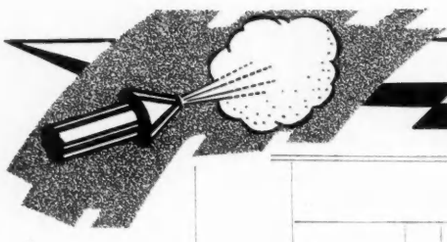
CA—Cast Alloy
Car—Carter Carburetor
CAS—Cast Alloy Steel
Ch—Chain
CHS—Chrome Nickel Silicon Steel
CI—Cast Iron
CIA—Cast Iron, Anodized
CNI—Chrome Nickel Iron
CNM—Chrome Nickel Molybdenum
CNS—Chrome Nickel Steel
CNT—Chrome Nickel Steel with Tungsten
CS—Carbon Steel
CT—Cast Iron, Tin plated
d—Wrist Pins
D—Dry Liners

Engines—*Concluded.*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT																
Seats													Crank-Pin	MAIN BEARINGS									OVERALL DIMENSIONS (In.)			
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Front End Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number or Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Spark Plug—Thread Size	CARBURETOR Make	CARBURETOR Size	Engine Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Line Number
45	N	.....	HG	CIA	82	1.25x3.87	4	1045	11⅜	87	1045	N	2.56x2.25	5	2.56x4.25	2.56x4.25	abce	⅞–18	Str	1½	1175	22¾	27 1/16	59 1/16	1
45	N	.....	HG	CIA	126	1.43x4.68	4	1045	13¼	168	1045	N	2.56x3.00	5	2.62x4.50	2.62x4.50	abcde	⅞–18	Str	2	1720	25⅞	37⅜	74 1/16	2
45	N	.....	HG	CIA	150	1.43x5.25	4	1045	13¼	168	1045	N	2.56x3.00	5	2.62x4.50	2.62x4.50	abcde	⅞–18	Str	2	1730	25⅞	37⅜	74 1/16	3
45	N	.....	HG	CIA	190	1.43x5.50	4	1045	13¼	168	1045	N	2.56x3.00	5	2.62x4.50	2.62x4.50	abcde	⅞–18	Str	2	1740	25⅞	37⅜	74 1/16	4
45	.....	.....	HG	AI	37	1.00x3.50	4	1045	8	40	1045	N	2.00x1.50	7	2.62x2.00	2.62x1.25	abcde	18 mm	Str	1¼	1000	22½	28¼	53 1/32	5
45	.....	.....	HG	AI	48	1.00x4.00	4	1045	8¾	48	1045	N	2.25x1.50	7	2.62x2.75	2.62x1.62	abcde	14 mm	Str	1¼	1185	20¼	27⅞	57 1/8	6
45	N	.....	HG	CIA	82	1.25x3.87	4	1045	11⅜	87	1045	N	2.56x2.25	7	2.56x4.25	2.56x4.25	abce	⅞–18	Str	2	1475	23⅜	33¼	72 1/16	7
45	N	.....	HG	CIA	106	1.25x4.31	4	1045	11⅜	87	1045	N	2.56x2.25	7	2.56x4.25	2.56x4.25	abce	⅞–18	Str	2	1565	24½	33¼	72 1/16	8
45	N	.....	HG	CIA	126	1.43x4.68	4	1045	13¼	168	1045	N	2.55x3.00	7	2.62x4.50	2.62x4.50	abcde	⅞–18	Str	2	2330	27½	37⅜	91 1/16	9
45	N	.....	HG	CIA	150	1.43x5.25	4	1045	13¼	168	1045	N	2.55x3.00	7	2.62x4.50	2.62x4.50	abcde	⅞–18	Str	2	2360	27½	37⅜	91 1/16	10
45	N	.....	HG	CIA	190	1.43x5.50	4	1045	13¼	168	1045	N	2.55x3.00	7	2.62x4.50	2.62x4.50	abcde	⅞–18	Str	2	2380	27½	37⅜	91 1/16	11
45	N	.....	HG	CI	.....	1.00x3.75	3	AI	8½	.....	CS	Y	2.00x2.00	2	2.00x2.00	2.00x2.00	Splash	⅞–18	Str	5/8	200	15 1/16	24⅜	17 1/16	12
45	N	.....	HG	AIs	15	.750x2.56	4	CS	7¼	26	CS	Y	1.75x1.37	2	1.75x1.87	1.75x2.00	abce	18 mm	Zen	5/8	300	20 1/16	22⅝	28 1/16	13
45	N	.....	HG	CI	19	.625x2.44	3	CS	7½	22	CS	N	1.50x1.75	2	1.50x2.75	1.50x2.75	abce	18 mm	Zen	1	347	17 1/16	21 1/16	34 1/16	14
45	N	.....	HG	AI	15	.750x2.56	4	AI	7¼	18	CS	Y	1.75x1.37	3	1.75x2.50	1.75x2.50	abce	18 mm	Zen	1	400	19 1/16	22⅝	34 1/16	15
45	N	.....	HG	AI	20	.875x2.75	4	AI	8½	30	CS	N	2.00x1.75	3	2.00x2.50	2.00x2.50	abc	18 mm	Zen	1	520	18½	25 1/16	39 1/16	16
45	N	.....	HG	AI	15	.750x2.56	4	AI	7¼	18	CS	Y	1.75x1.37	4	1.75x2.50	1.75x2.50	abce	18 mm	Zen	1¼	515	24	20¾	43 1/16	17
45	N	.....	HG	AI	28	.875x3.00	4	AI	8½	28	CS	N	2.00x1.87	7	2.00x2.56	2.00x2.56	abce	18 mm	Str	1¼	775	20 1/16	26¾	49 1/16	18
45	N	.....	HG	AI	28	.875x3.00	4	AI	8½	28	CS	N	2.00x1.87	7	2.00x2.56	2.00x2.56	abce	18 mm	Str(2)	1¼	810	22 1/16	26¾	49 1/16	19
45	N	.....	HG	AI	28	.875x3.00	4	AI	8½	28	CS	N	2.00x1.87	9	2.00x2.56	2.00x2.56	abce	18 mm	Str	1¾	1050	21 1/16	26 1/16	62 1/16	20
45	N	.....	HG	AI	28	.875x3.00	4	AI	8½	28	CS	N	2.00x1.87	9	2.00x2.56	2.00x2.56	abce	18 mm	Str(2)	1½	1100	22¾	26 1/16	62 1/16	21
(h)	E	CNS	HG	AIa	76	1.25x4.18	5	AS	12	(aa)	AS	N	2.37x2.50	7	2.62x4.62	2.62x2.00	abc	18 mm	Zen	2	1920	32¼	40¾	90¼	22
prop	eller	shaft	—800	H.P.	—We	ight 5400	lbs.																			23
45	Bo	CNS		AI		1.62x5.90	5	4340	12	228	4140	Y	3.50x2.87	7	4.00x3.00	4.00x3.00	abcer	18 mm	Str	2	3490	49	50	101	24
45	N	.....	HG	AI	12	.625x2.62	4	1045	4⅝	12	1045	Y	1.50x1.00	2	1.50x1.00	2.25x2.31	abcde	14 mm	Op	5/8	125	20¾	14½	15⅝	25
45	N	.....	HG	CI	9	.625x2.12	4	1045	6	14	1045	N	1.53x1.25	2-9)	ND1207	ND1207	abcde	14 mm	Op	5/8	143	14 1/16	20½	21 1/16	26
45	E	CA	HG	CI	26	.875x2.25	4	1045	7¼	29	1045	N	1.75x1.06	3	2.12x1.18	2.12x1.43	abcde	18 mm	Op	1	280	19	26¾	37¾	27
45	E	CA	HG	CI	30	.875x2.75	4	1045	7¼	29	1045	N	1.75x1.06	3	2.12x1.18	2.12x1.43	abcde	18 mm	Op	1	290	19	26¾	37⅜	28
45	N	.....	HG	CI	43	.875x2.68	5	1045	6	28	1045	N	2.00x1.37	3	2.25x1.62	2.25x1.62	a	18 mm	Op	1	335	17¾	25⅝	28½	29
45	E	CA	HG	CI	45	1.12x3.03	4	1045	8¾	46	1045	N	2.00x1.50	3	2.00x1.87	2.00x2.50	abcde	⅞–18	Op	1	.....	17⅞	27	32 1/16	30
(h)	E	CA	HG	CI	58	1.12x3.06	4	1045	8¾	57	Pro	N	2.25x1.75	3	2.62x1.75	2.62x2.25	abcdeg	18 mm	Op	1¼	670	21½	38¾	33 1/16	31
(h)	E	CA	HG	CI	69	1.12x3.31	4	1045	8¾	57	Pro	N	2.25x1.75	3	2.62x1.75	2.62x2.25	abcdeg	18 mm	Op	1¼	680	21½	38¾	33 1/16	32
45	E	CA	HG	CI	76	1.31x3.87	4	1045	10½	86	1045	N	2.37x2.12	3	2.37x2.12	2.37x2.75	abcdeg	⅞–18	Op	1¼	875	21¼	35	39	33
45	E	CA	HG	CI	85	1.31x4.06	4	1045	10½	86	1045	N	2.37x2.12	3	2.37x2.12	2.37x2.75	abcdeg	⅞–18	Op	1¼	925	21¼	35	39	34
45	E	CA	HG	CI	96	1.31x4.06	4	1045	10½	85	1045	N	2.37x2.12	3	2.37x2.31	2.37x2.75	abcdeg	18 mm	Op	1¼	.....	.....	.....	39 1/16	35
45	E	CA	HG	CI	132	1.50x4.48	4	1045	11¾	141	1045	N	2.75x2.50	3	3.00x2.87	3.00x3.56	abcdeg	⅞–18	Op	1½	1600	24	42	46 1/16	36
45	E	CA	HG	AI	32	1.00x3.12	4	1045	8	40	1045	N	2.00x1.50	7	2.62x1.25	2.62x2.00	abcde	18 mm	Op	1¼	675	26	31	39 1/16	37
45	E	CA	HG	AI	34	1.00x3.25	4	1045	8	40	1045	N	2.00x1.50	7	2.62x1.25	2.62x2.00	abcde	18 mm	Op	1¼	685	26	31	39 1/16	38
45	E	CA	HG	AI	37	1.00x3.50	4	1045	8	40	1045	N	2.00x1.50	7	2.62x1.25	2.62x2.00	abcde	18 mm	Op	1½	690	28	31	39 1/16	39
45	E	CA	HG	AI	46	1.00x3.85	4	1045	8	40	1045	N	2.00x1.50	7	2.62x1.25	2.62x2.00	abcde	18 mm	Op	1½	706	26	31	39 1/16	40
45	E	CA	HG	AI	45	1.00x3.85	4	1045	8¾	45	1045	N	2.25x1.50	7	2.62x1.62	2.62x2.75	abcde	18 mm	Op	1½	.....	20½	31	43 1/16	41
45	E	CA	HG	AI	48	1.00x4.00	4	1045	8¾	48	1045	N	2.25x1.50	7	2.62x1.62	2.62x2.75	abcde	18 mm	Op	1¾	920	20½	31	43 1/16	42
(h)	E	CA	HG	AI	60	1.37x3.62	4	1045	10¼	85	Pro	N	2.62x2.00	7	3.25x1.75	3.25x3.00	abcdeg	18 mm	Op	1¾	.....	21 1/16	43 3/32	50 5/8	43
30	E	CA	HG	AI	89	1.37x4.00	4	1045	10¼	83	1045	N	2.75x1.75	7	3.00x1.87	3.00x3.00	abcde	⅞–18	Op	1¾	1185	26	35 1/16	46 5/8	44
(h)	E	CA	HG	AI	64	1.37x3.87	4	1045	10¼	85	Pro	N	2.62x2.00	7	3.25x1.75	3.25x3.00	abcdeg	18 mm	Op	1¾	1340	21 1/16	43 3/32	50 5/8	45
30	E	CA	HG	AI	70	1.37x4.25	4	1045	10¼	83	1045	N	2.75x1.75	7	3.00x1.87	3.00x3.00	abcde	⅞–18	Op	1¾	1225	26	35 1/16	46 5/8	46
(h)	E	CA	HG	AI	.....	1.62x4.37	4	1045	11¾	133	Pro	N	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdeg	18 mm	Op	2	1983	55 11/32	25¾	46 11/16	47
45	E	CA	HG	AI	129	1.87x4.25	4	1045	11¾	130	1045	N	3.00x2.00	7	3.62x2.62	3.62x3.50	abcdeg	18 mm	Op	2	2230	26 1/16	49 1/16	58 3/16	48
45	E	CA	HG	AI	89	1.37x4.60	4	1045	13¼	145	1045	N	2.75x2.50	7	3.50x2.50	3.50x3.50	abcde	⅞–18	Op	2	1575	26	41 1/16	54 1/16	49
(h)	E	CA	HG	AI	103	1.62x4.87	4	1045	11¾	133	Pro	N	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdeg	18 mm	Op	2	.....	55 11/32	25¾	46 11/16	50
45	E	CA	HG	AI	134	1.87x4.75	4	1045	11¾	130	1045	N	3.00x2.00	7	3.62x2.62	3.62x3.50	abcdeg	18 mm	Op	2	2250	26 1/16	49 1/16	58 3/16	51
(h)	E	CA	HG	CI	262	1.87x5.00	4	1045	13¼	195	1045	N	3.37x2.37	7	4.00x2.56	4.00x3.56	abcdeg	18 mm	Op	2½	3200	28	51½	65 5/8	52
(h)	E	CA	HG	AI	176	1.87x5.50	4	1045	13¼	195	1045	N	3.37x2.37	7	4.00x2.56	4.00x3.56	abcdeg	18 mm	Op	2½	3220	28	51½	65 5/8	53
30	E	CA	HG	CI	.....	2.00x6.00	4	1045	15⅜	314	1045	N	3.25x2.75	7	3.75x3.75	3.75x5.50	abcdeg	18 mm	Op	2½	4950	32⅜	56¼	76⅝	54
30	E	CA	HG	CI	304	2.00x6.00	4	1045	15⅜	314	1045	N	3.25x2.75	7	3.75x3.75	3.75x5.50	abcdeg	18 mm	Op	2½	4975	32⅜	56¼	76⅝	55
30	E	CA	HG	CI	304	2.00x6.00	4	1045	15⅜	314	1045	N	3.25x2.75	7	3.75x3.75	3.75x5.50	abcdeg	18 mm	Op	2½	4975	32⅜	57⅛	76⅝	56
30	E	CA	HG	CI	776	2.25x7.75	5	1045	18⅜	474	1045	N	4.00x3.75	7	4.25x4.81	4.25x5.50	abcdeg	⅞–18	Op(2)	2½	7800	46½	63¾	92 1/16	57
45	E	AS	HG	AI	38	1.00x3.03	5	1040	9 1/16	40	1050	Y	2.18x1.34	7	3.00x1.84	3.00x1.93	abcde	14 mm	Str	1¼	973	29⅝	40⅝	44¼	58
45	E	AS	HG	AI	43	1.00x3.03	5	1040	9 1/16	52	1050	Y	2.18x1.34	7	3.00x1.84	3.00x1.93	abcde	14 mm	Str	1¼	973	29⅝	40⅝	44¼	59
45	E	AS	HG	AI	45	1.00x3.46	5	1040	9 1/16	52	1050	Y	2.18x1.34	7	3.00x1.84	3.00x1.93	abcde	14 mm	Str	1¼	993	29⅝	40⅝	44¼	60
45	E	AS	HG	AI	45	1.00x3.46	5	1040	9 1/16	52	1040	Y	2.18x1.34	7	3.00x1.84	3.00x1.93	abcde	14 mm	Str	1¼	1051	29⅝	40⅝	44¼	61
45	E	St	HG	AI	45	1.00x3.46	5	.....	9 1/16	52	.....	Y	2.18x1.34	7	3.00x1.84	3.00x1.93	abcdef	14 mm	Str	1¼	1280*	.....	.....	.....	62
.....	E	CNM	HG	AI	30	1.18x–...	5	.....	8 3/32	.....	.....	Y	2.43x2.31	7	2.87x2.09	2.87x2.40	abcdef	14 mm	Zen	.....	2275*	.....	.....	.....	63
45	N	.....	Ch	AI	.....	.812x2.78	3	MS	9 3/16	34	1040	Y	1.94x1.30	3	2.33x1.92	2.33x1.75	abce	14 mm	Car	1¼	364	19	26⅜	26¼	64
45	E	Mo	HG	AI	6	.625x1.81	3	AI	6	6	1045	Y	1.00x1.00	2	(9)	(9)	.....	18 mm	Str	5/8	68	17¼	16¾	14½	65
45	E	Mo	HG	AI	8	.625x2.06	3	AI	6	6	1045	Y	1.00x1.00	2	(9)	(9)	.....	18 mm	Str	5/8	68	17¼	16¾	14½	66
45	Bo	Mo	HG	AI	12	.750x2.29	3	1035	8	20	1045	Y	1.12x1.25	2	(9)	(9)	.....	18 mm	Str	¾	125	16¾	20 1/16	17½	67
45	E	Mo	HG	AI	10	.625x2.37	4	AI	6	6	1045	Y	1.00x1.00	2	(9)	(9)	.....	18 mm	Str	5/8	70	17¾	16¾	15	68
45	Bo	Mo	HG	AI	14	.750x2.56	3	1035	8	20	1045	Y	1.12x1.25	2	(9)	(9)	.....	18 mm	Str	¾	130	16¾	20 1/16	17½	69
45	Bo	Mo	HG	AI	24	.937x2.75	5	1035	9½	33	1045	Y	1.37x1.37	2	(9)	(9)	.....	18 mm	Str	¾	.....	18⅞	24⅛	19 1/16	70
45	Bo	Mo	HG	AI	24	.937x2.75	3	1035	9½	33	1045	Y	1.37x1.37	2	(9)	(9)	.....	18 mm	Str	¾	175	18⅞	24⅛	19 1/16	71
45	Bo	Mo	HG	AI	26	.937x3.00	3	1035	9½	33	1045	Y	1.37x1.37	2	(9)	(9)	.....	18 mm	Zen	1	180	18⅞	24⅛	18 1/16	72
45	Bo	Mo	HG	AI	11	.875x2.17	4	1035	8⅜	21	1045	Y	1.75x1.12	2	(9)	(9)	g	18 mm	Str	¾	230	17	26¼	29	73
45	Bo	Mo	HG	AI	16	.750x2.56	5	1045	8⅜	21	1045	N	1.37x1.12	2	(9)	(9)	.....	18 mm	Str	7/8	285*	21½	25½	25⅜	74
45	Bo	Mo	HG	AI	24	.937x2.75	5	1035	8⅜	29	1045	N	1.75x1.25	3	(9)	(9)	ag	18 mm	Str	1	340	20	29	36⅜	75
45	Bo	Mo	HG	AI	27	.937x2.75	4	1035	8⅜	29	1045	N	1.75x1.25	3	(9)	(9)	ag	18 mm	Str	1	345	20	29	36⅜	76
45	N	.....	HG	CI	66	1.25x3.14	3	CS	10½	75	CS	N	2.62x1.75	4	2.75x2.25	2.75x2.75	abdeg	⅞–18	Str	1½	1075	25¾	37 1/16	53⅝	77
45	N	.....	HG	CI	71	1.25x3.40	4	1035	10½	75	1045	N	2.62x1.75	4	2.75x2.25	2.75x2.75	abdeg	⅞–18	Str	1½	1095	25¾	37 1/16	53⅝	78
45	N	.....	HG	CI	81	1.25x3.40	4	1035	10½	75	1045	N	2.62x1.75	4	2.75x2.25	2.75x2.75	abdeg	⅞–18	Str	1½	1110	25¾	37 1/16	53⅝	79
45	N	.....	HG	CI	56	1.18x3.93	4	CS	10½	119	CS	N	2.75x2.50	4	2.75x3.00	2.75x3.00	abcdeg	⅞–18	Str	1¾	1260	25¾	37 1/16	60 1/16	80
45	N	.....	HG	CI	82	1.18x3.93	4	1035	10½	87	1045	N	2.75x2.50	4	2.75x3.00	2.75x3.00	abcdeg	⅞–18	Str	1¾	1270	25¾	37 1/16	60 1/16	81

ABBREVIATIONS—Cont.

DC—Durachrome Casting
DFS—Drop Forged Steel
Dia—Diachrome
Dur—Duralumin
e—Timing Gears or Chain
E—Used on Exhaust valve seats
f—Accessories drive
F—In Head and Side ("F" Head)
FA—Fire Apparatus
g—Rocker Arms and Shafts
(h)—Intake 30°, Exhaust 45°
(H)—Horizontal Motor
HC—Helical Gear and Chain
HG—Helical Gear
HH—Horizontal in Head (Valves)
Hol—Holley Carburetor
HS—High Speed Steel
I—In Head (Valves)
In—Integral
Ind—Industrial
JM—Jadson 1-S material
(k)—Intake 30°, Exhaust 44°
L—Valves at Side (L-Head)
M—Marine
ML—Mechanical Lubricator System
Mo—Molybdenum
MS—Manganese Steel
N—No or none
NCI—Nickel Cast Iron
Nif—Niferrite
NS—Nickel Steel
Op—Optional
Pro—Proferal
r—Reverse Gear
RC—Rail Cars
SA—Special Alloy
SB—Spiral Bevel Gear
Sch—Schebler Carburetor
Se—Separate
SG—Spur Gear
Sho—Shore Carburetor
Sil—Silcrome Steel
Spec—Special
SS—Semi-Steel
St—Stellite Steel
Sta—Stabl-ite Steel (Mack)
Str—Stromberg Carburetor
SZ—Schebler and Zenith Carburetors
t—Tappets and Valve Mechanism
T—Valves Opposite (T-Head)
T—Trucks
TA—Tungsten Alloy
Til—Tilotson Carburetor
Tr—Tractors
Tun—Tungsten Steel
W—Wet Liners
WA—Wausau Alloy
WR—Wilcox-Rich-EA5
(x)—Sodium Cooled
Y—Yes **Zen**—Zenith Carburetor



AUTOMOTIVE DIESEL

Line Number	ENGINE MAKE AND MODEL	Built Under License from	GENERAL: Designed for	Type	Number of Cylinders Bore and Stroke (In.)	Cycle	Piston Displacement (Cu. In.)	With Bare Engine: Maximum Brake Hp. at Specified R.P.M.	With Standard Accessories: Max. Intermittent Hp. at Specified R.P.M.	With Standard Accessories: Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio - to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	VALVES: Arrangement	VALVES: Intake Port Diameter and Lift (In.)
1	Atlas Imp. (1)6EM253	Own	M	DI	6-6¼x3½	4	1012			135-900	15.00	760	117	42.2			5700	VI	2.31- .562
2	Atlas Imperial 2AM115	Own	M	DI	2-4¾x6½	4	230			18-950	15.00	675	65	105.5			1900	VI	1.62- .390
3	Atlas Imperial 1LN29	Lanova	I	AC	1-3½x3¾	4	29	6.2-1800	5.7-1800	5-1800		725	76	72.8	15-1800	364		VI	1.06-
4	Atlas Imperial 3LN29	Lanova	M,I	AC	3-3½x3¾	4	86	18.5-1800	17.5-1800	15-1800		725	77	47.6	44-1800	604	715	VI	1.06-
5	Buda 4-DT-212	Lanova	C,T,Tr,R	AC	4-3⅝x5½	4	212	60.5-2300	49-2300	37-1800	14.50	725	77	25.7♣	123.5-1400	950		VI	1.37- .486
6	Buda 4-DTM-212	Lanova	M	AC	4-3⅝x5½	4	212	60.5-2300	50.2100	40-1800	14.50	725	83	24.6	132-1400		985	VI	1.37- .486
7	Buda 4-DT-226	Lanova	C,T,Tr,R	AC	4-3¾x5½	4	226	58.5-2000	48-2000	39-1800	14.50	725	76	24.3♣	132-1400	950		VI	1.37- .486
8	Buda 6-DT-278	Lanova	C,T,Tr,B	AC	6-3⅝x4½	4	278	82-2600	69-2600	47-1800	14.50	725	74	23.5♣	161.8-1500	1105		VI	1.37- .486
9	Buda 6-DT-294	Lanova	C,T,Tr,B	AC	6-3⅝x4¾	4	294	85-2400	71-2400	51-1800	14.50	725	76	21.9♣	177-1500	1115		VI	1.37- .486
10	Buda 6-DT-317	Lanova	C,T,Tr,B	AC	6-3⅝x5⅛	4	317	90-2300	75-2300	52.5-1800	14.50	725	73	21.6♣	185.4-1500	1133		VI	1.37- .486
11	Buda 6-DTM-317	Lanova	M	AC	6-3⅝x5⅛	4	317	90-2300	75-2100	56-1800	14.50	725	78	22.3	195-1500		1250	VI	1.37- .486
12	Buda 6-DT-389	Lanova	T,Tr,B	AC	6-3⅞x5½	4	389	96-2100	74.5-2100	57-1600	14.20	725	73	24.5♣	222.5-1100	1400		VI	1.44- .476
13	Buda 6-DT-468	Lanova	T,Tr,B	AC	6-4¼x5½	4	468	113-2000	89-2000	68-1600	14.20	725	72	21.1♣	268.5-1100	1435		VI	1.59- .476
14	Buda 6-DTM-468	Lanova	M	AC	6-4¼x5½	4	468	113-2000	97-1800	75-1600	14.20	725	79	23.7	308-1100		1775	VI	1.59- .476
15	Buda 6-DH-691	Lanova	T,Tr,R	AC	6-4¾x6½	4	691	150-1800	123-1800	81-1200	13.70	725	77	28.0♣	404-1100	2270		VI	1.72- .516
16	Buda 6-DHM-691	Lanova	M	AC	6-4¾x6½	4	691	150-1800	125-1600	92-1300	13.70	725	81	29.3	432-1100		2700	VI	1.72- .516
17	Buda 6-DC-691	Lanova	T,Tr,R	AC	6-4¾x6½	4	691	150-1800	123-1800	81-1200	13.70	725	77		404-1100			VI	1.94- .540
18	Buda 6-DCM-691	Lanova	M	AC	6-4¾x6½	4	691	150-1800	125-1600	92-1300	13.70	725	81		432-1100			VI	1.94- .540
19	Buda 6-DC-844	Lanova	T,Tr,R	AC	6-5¼x6½	4	844	180-1800	150-1800	98-1200	13.70	725	77		492-1100			VI	1.94- .540
20	Buda 6-DCM-844	Lanova	M	AC	6-5¼x6½	4	844	180-1800	152-1600	112-1300	13.70	725	81		527-1100			VI	1.94- .540
21	Buda 6-DH-909	Lanova	T,Tr,B,R,I	AC	6-5¼x7	4	909	169-1500	143-1500	107-1200	13.60	725	77	30.4♣	534-900	3250		VI	1.90- .540
22	Buda 6-DHM-909	Lanova	M	AC	6-5¼x7	4	909	169-1500	152-1500	117-1200	13.60	725	85	28.6	589-900		3350	VI	1.90- .540
23	Buda 6-DH-1611	Lanova	R,I	AC	6-6¼x8¾	4	1611	217-1100	176-1100	135-900	13.00	725	75	50.9♣	917-650	6875		VI	2.25- .687
24	Buda 6-DH-1742	Lanova	R,I	AC	6-6½x8¾	4	1742	234-1100	192-1100	146-900	13.00	725	74	47.3♣	991-650	6900		VI	2.37- .687
25	Buda 6-DH-1879	Lanova	R,I	AC	6-6¾x8¾	4	1879	248-1100	203-1100	155-900	13.00	725	73	44.8♣	1043-650	6950		VI	2.50- .687
26	Buda 6-DHM-1879	Lanova	M	AC	6-6¾x8¾	4	1879	248-1100	222-1100	186-1000	13.00	725	78	34.9	1140-650		6500	VI	2.50- .687
27	Buda 6-PHD-1879	Lanova	I	AC	6-6¾x8¾	4	1879	248-1100	203-1100	155-900	13.00	725	73	58.1♣	1043-650	9000		VI	2.50- .687
28	Caterpillar D-17000	Own	M,I,R	PC	8-5¾x8	4	1662		152-1000	136-1000			65	65.4	1020-650	7900	8900	VI	
29	Caterpillar D-13000	Own	Tr,M,R,I	PC	6-5¾x8	4	1246		120-1000	108-1000			69	51.9♣	815-650	5610	5780	VI	
30	Caterpillar D-11000	Own	M,I	PC	6-5¼x8	4	1039		94.5-1000	84.5-1000			64	68.4	640-650	5560	5780	VI	
31	Caterpillar D-8800	Own	Tr,M,I	PC	4-5¾x8	4	831		88-1000	79-1000			75	55.7♣	545-750	4400	4550	VI	
32	Caterpillar D-7700	Own	M,I	PC	4-5¼x8	4	693		74-1000	66-1000			75	68.9	458-750	4400	4550	VI	
33	Caterpillar D-4600	Own	M,I	PC	6-4¼x5½	4	468		60.3-1600	54-1600			57	57.9	275-900	2990	3130	VI	
34	Caterpillar D-4400	Own	Tr,M,I	PC	4-4¼x5½	4	312		40.5-1600	36.2-1600			57	65.1♣	180-900	2360	2430	VI	
35	Caterpillar D-3400	Own	Tr,M,I	PC	4-3⅜x5	4	221		28.2-1650	25.2-1650			55	67.0♣	125-1000	1890	1930	VI	
36	Caterpillar D-468	Own	T	PC	6-4¼x5½	4	468		90-1800				85	23.5♣	305-900	2120		VI	
37	Caterpillar D-312	Own	T	PC	4-4¼x5½	4	312		60-1800				85	25.0♣	193-1200	1500		VI	
38	Cooper-Bessemer EN		M,R,I	DI	8-8x10½	4	4222		450-900	400-900		800	83	40.0	3300-600		16000	VI	3.12- .757
39	Cooper-Bessemer GN		M,R,I	DI	8-10½x13½	4	9353		925-750	750-750		750	85	48.0	7400-450		36000	VI	4.00-1.125
40	Cummins A	Own	T,B,Tr,M,R,I	DI	4-4x5	4	251		56.5-2200■	33-1400■	18.00	750	74	41.1♣	180-1200	1355	1865	VI	1.37- .406
41	Cummins A	Own	T,B,Tr,M,R,I	DI	6-4x5	4	377		85-2200■	57-1600■	18.00	750	75	32.1♣	275-1200	1830	2030	VI	1.37- .406
42	Cummins H	Own	T,B,Tr,M,R,I	DI	4-4¾x6	4	448		83-1800	50-1200	17.00	750	74	38.6♣	340-800	1930	3315	VI	1.93- .500
43	Cummins H	Own	T,B,Tr,M,R,I	DI	6-4¾x6	4	672		125-1800	85-1400	17.00	750	72	29.9♣	500-800	2540	3670	VI	1.93- .500
44	Cummins HS	Own	T,B,Tr,M,R,I	DI	6-4¾x6	4	672		175-1800		14.00	925	114		625-1400	3000	4040	VI	1.93- .500
45	Dodge T-126	Lanova	T,Tr	AC	6-3¾x5	4	331	100-2600		95-2600	14.75	900	87	14.0♣	240-1600	1330		VI	.375
46	Fairbanks-Morse (4) 36	Own	M,R,I	TC	6-4¼x6	4	510		75-1200	60-1200	16.80	800	78		330-1050			VI	
47	Fairbanks-Morse (5) 36	Own	M,R,I	TC	6-5½x7½	4	1068		150-1200	120-1200	14.70	800	74		660-1050			VI	
48	Fairbanks-Morse (5) 46	Own	M,R,I	DI	6-8x10½	4	3167		324-800	225-720	14.90	800	78		2070-650			VI	
49	General Motors 3-71	Own	T,B,Tr,M	DI	3-4¼x5	2	212		83-2000	62-2000	16.00	980	58	18.5♣	263-1000	1150		VI	No Valves
50	General Motors 4-71	Own	T,B,Tr,M	DI	4-4¼x5	2	284		110-2000	83-2000	16.00	980	58	15.7♣	350-1000	1300		VI	No Valves
51	General Motors 6-71	Own	T,B,Tr,M	DI	6-4¼x5	2	425		165-2000	123-2000	16.00	980	57	13.5♣	525-1000	1660		VI	No Valves
52	Gray Marine (7)	G.M.Corp.	M	DI	6-4¼x5	2	425		165-2000	123-1200	16.00	980	95	19.7	525-1000		2425	VI	No Valves
53	Hercules DIXB	Own	Tr,M,I	TC	2-3¾x4½	4	99	24-1800	20.5-1800	20.5-1800	15.50	750	91	29.7	81-1400		610	VI	1.62- .375
54	Hercules DIXC	Own	Tr,M,I	TC	2-4x4½	4	113	276-1800	23.5-1800	23.5-1800	15.50	750	91	25.9	81-1400		610	VI	1.62- .375
55	Hercules DIXD	Own	Tr,M,I	TC	2-4¼x4½	4	127	276-1600	23.5-1600	23.5-1600	15.50	750	92	25.9	91-1300		610	VI	1.62- .375
56	Hercules DOOB	Own	T,Tr,M,I	TC	4-3¾x4½	4	199	62-2600	53-2600	41-1800	14.50	750	91	18.3♣	143-1500	750		VI	1.62- .375
57	Hercules DOOC	Own	T,Tr,M,I	TC	4-4x4½	4	226	70-2600	60-2600	47-1800	14.50	750	91	15.9♣	162-1400	750		VI	1.62- .375
58	Hercules DOOD	Own	T,Tr,M,I	TC	4-4¼x4½	4	255	79-2600	66-2600	53-1800	14.50	750	91	14.2♣	180-1400	750		VI	1.62- .375
59	Hercules DJXB	Own	T,Tr,M,R,I	TC	6-3½x4½	4	260	77-2600	66-2600	51-1800	14.50	750	86	17.2♣	178-1400	875		VI	1.62- .375
60	Hercules DJXC	Own	T,B,Tr,M,R,I	TC	6-3¾x4½	4	298	83-2600	71-2600	59-1800	14.50	750	87	14.8♣	208-1500	875		VI	1.62- .375
61	Hercules DWXC	Own	T,B,Tr,M,R,I	TC	6-4x4¾	4	358	108-2400	92-2400	77-1800	14.50	750	95		265-1400			VI	1.68- .395
62	Hercules DWXD	Own	T,B,Tr,M,R,I	TC	6-4¼x4¾	4	404	122-2400	104-2400	85-1800	14.50	750	93		299-1400			VI	1.68- .395
63	Hercules DRXB	Own	T,B,Tr,M,R,I	TC	6-4⅜x5¼	4	474	120-2000	102-2000	89-1600	14.50	750	93	16.1♣	350-1300	1435		VI	2.00- .395
64	Hercules DRXC	Own	T,B,Tr,M,R,I	TC	6-4⅝x5¼	4	529	133-2000	113-2000	88-1400	14.50	750	94	16.3♣	380-1400	1435		VI	2.00- .395
65	Hercules DHXB	Own	T,B,Tr,M,R,I	TC	6-5x6	4	707	176-1800	150-1800	121-1400	14.50	750	97	20.7♣	530-1400	2500		VI	2.37- .500
66	Hercules DHXC	Own	T,B,Tr,M,R,I	TC	6-5½x6	4	855	146-1200	124-1200	108-1000	14.50	750	100	23.1♣	675-875	2500		VI	2.37- .500
67	Hercules DFXB	Own	T,B,M,R,I	TC	6-5x6	4	707	177-1800	150-1800	121-1400	14.50	750	97	19.8♣	530-1400	2400		VI	2.37- .500
68	Hercules DFXC	Own	T,B,M,R,I	TC	6-5¼x6	4	779	191-1800	162-1800	133-1400	14.50	750	97	18.0♣		2400		VI	2.37- .500
69	Hercules DFXD	Own	T,B,M,R,I	TC	6-5½x6	4	855	193-1600	164-1600	147-1400	14.50	750	97	16.3♣		2400		VI	2.37- .500
70	Kermath DIX	Hercules	M	TC	2-4x4½	4	113		27-1800	20-1800	15.50	750	78	43.5	81-1400		870	VI	1.62- .375
71	Kermath DOO	Hercules	M	TC	4-4x4½	4	226		65-2600	49-2600	14.50	500	66	24.5	162-1400		1200	VI	1.62- .375
72	Kermath DJX	Hercules	M	TC	6-3¾x4½	4	298		84-2600	63-2600	14.50	500	64	21.5	208-1500		1355	VI	1.62- .375
73	Kermath DRX	Hercules	M	TC	6-4⅜x5¼	4	474		113-1800	85-1800	14.50	475	79	24.7	350-1300		2100	VI	2.00- .395
74	Kermath DHX	Hercules	M	TC	6-5x6	4	707		160-1600	120-1600	14.50	475	84	26.5	530-1400		3182	VI	2.37- .500
75	Mack 405	Lanova	T,B,M	LE	6-4x5⅝	4	405	107-2200	94-2200	65-1500 (8)	14.60	840	85	26.3♣	308-1200	1710	2250 (9)	VI	1.56- .418
76	Mack ED	Lanova	T,B,M	LE	6-4⅜x5¾	4	519	133-2200	122-2200	80-1500 (8)	14.57	840	82	22.8♣	381-1300	1823	2750 (9)	VI	1.64- .500
77	Mack END805	Lanova	T,B,M	LE	6-4⅝x6	4	605	144-2000	130-2000	100-1500 (8)	14.63	840	87	19.8♣	455-1100	1980	3200 (9)	VI	1.64- .500

(For abbreviations see pages 254-255)

AND OTHER HEAVY OIL ENGINES

VALVES		PISTONS				PISTON PIN		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM									STARTING METHOD		OVER ALL DIMENSIONS			
Exhaust Port Diameter and Lift (In.)	Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked in—	Material (S.A.E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifices	Pressure—Nozzle Opening (Lb. per Sq. In.)	Air Cleaner—Make	Fuel Filter—Make	Lubricant Filter—Make	Minimum Recommended Cetane Number of Fuel	Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)	Line Number
2.00– .656	Al	9.75	27.00	4	2	2.50–2.50	F	1045	17.75	24.0	5	4.62	AB	AB	C	Mu	2200	Op	Pur	Pur	35	Own	Air	70	31	58	1
1.50– .468	Al	8.25	11.50	4	2	1.62–2.37	P	1040	13.00	10.8	2	.....	AB	AB	C	Mu	2000	Op	Pur	Pur		DR	Ele	35	27	45	2
.96–	Alu	4.25	.....	3	2	.....	F	X1335	7.56	.....	2	2.25	AB	AB	C	Pi	1600	AM	AB	Pur	48	AL	Ele	20 3/16	15 7/8	36 1/16	3
.96–	Alu	4.25	.....	3	2	.....	F	X1335	7.56	.....	4	2.25	AB	AB	C	Pi	1600	AM	AB	Pur	48	AL	Ele	31 1/2	23 5/8	35 1/4	4
1.18– .486	Alu	4.93	3.00	3	2	1.25–2.92	F	1035	9.50	3.41	5	3.00	AB	AB	C	Pi	2000	Uni	B-P	DeL	46	DR	Ele	33 11/32	25 3/4	36 1/4 (12)	5
1.18– .486	Alu	4.93	3.00	3	2	1.25–2.92	F	1035	9.50	3.41	5	3.00	AB	AB	C	Pi	2000	.....	B-P	DeL	46	DR	Ele	46 7/16 (11)	26 7/8	33 3/8 (12)	6
1.18– .486	Alu	4.93	3.36	3	2	1.25–3.06	F	1035	9.50	3.41	5	3.00	AB	AB	C	Pi	2000	Uni	B-P	DeL	46	DR	Ele	33 11/32	25 3/4	36 1/4 (12)	7
1.18– .486	Alu	5.06	3.00	3	2	1.25–2.92	F	1035	9.50	3.41	7	3.00	AB	AB	C	Pi	2000	Uni	B-P	DeL	46	DR	Ele	42 15/32	27	35 1/2 (12)	8
1.18– .486	Alu	4.93	3.00	3	2	1.25–2.92	F	1035	9.50	3.41	7	3.00	AB	AB	C	Pi	2000	Uni	B-P	DeL	46	DR	Ele	42 15/32	27	35 1/2 (12)	9
1.18– .486	Alu	4.93	3.00	3	2	1.25–2.92	F	1035	9.50	3.41	7	3.00	AB	AB	C	Pi	2000	Uni	B-P	DeL	46	DR	Ele	42 15/32	27	35 1/2 (12)	10
1.18– .486	Alu	4.93	3.00	3	2	1.25–2.92	F	1035	9.50	3.41	7	3.00	AB	AB	C	Pi	2000	.....	B-P	DeL	46	DR	Ele	54 7/16 (11)	27 11/32	34 7/16 (12)	11
1.31– .476	Alu	5.25	3.84	3	2	1.50–3.18	F	6140	11.00	4.87	7	3.00	AB	AB	C	Pi	2000	Uni	B-P	DeL	46	DR	Ele	48 1/2	25 3/4	37 1/16 (12)	12
1.37– .476	Alu	5.25	4.48	3	2	1.50–3.56	F	6140	11.00	4.87	7	3.00	AB	AB	C	Pi	2000	Uni	B-P	DeL	46	DR	Ele	48 1/2	25 3/4	37 1/16 (12)	13
1.37– .476	Alu	5.25	4.48	3	2	1.50–3.56	F	6140	11.00	4.87	7	3.00	AB	AB	C	Pi	2000	.....	B-P	DeL	46	DR	Ele	61 11/32 (11)	29 7/16	36 7/8 (12)	14
1.56– .516	Alu	6.00	5.43	3	2	1.75–3.90	F	6140	12.50	10.25	7	3.50	AB	AB	C	Pi	2000	Uni	P-S	DeL	46	DR	Ele	57 3/4	34 1/16	44 1/16 (12)	15
1.56– .516	Alu	6.00	5.43	3	2	1.75–3.90	F	6140	12.50	10.25	7	3.50	AB	AB	C	Pi	2000	.....	P-S	DeL	46	DR	Ele	76 1/16 (11)	32	43 1/4 (12)	16
1.72– .540	Alu	.....	.....	3	2	1.75–3.90	F	6140	12.50	10.25	7	3.75	AB	AB	C	Pi	.....	Uni	P-S	DeL	46	DR	Ele	58 3/8	27	41 1/16 (12)	17
1.72– .540	Alu	.....	.....	3	2	1.75–3.90	F	6140	12.50	10.25	7	3.75	AB	AB	C	Pi	.....	.....	P-S	DeL	46	DR	Ele	.....	.....	.....	18
1.78– .540	Alu	.....	.....	3	2	1.75–	F	6140	12.50	10.25	7	3.75	AB	AB	C	Pi	.....	Uni	P-S	DeL	46	DR	Ele	58 3/8	27	41 1/16 (12)	19
1.78– .540	Alu	.....	.....	3	2	1.75–	F	6140	12.50	10.25	7	3.75	AB	AB	C	Pi	.....	.....	P-S	DeL	46	DR	Ele	.....	.....	.....	20
1.78– .540	Alu	8.00	9.30	3	2	2.00–4.37	F	6140	14.25	13.10	7	3.50	AB	AB	C	Pi	2000	Uni	P-S	DeL	46	D-N	E-G	68 3/4	34 1/2	58 11/16 (12)	21
1.78– .540	Alu	8.00	9.30	3	2	2.00–4.37	F	6140	14.25	13.10	7	3.50	AB	AB	C	Pi	2000	.....	P-S	DeL	46	D-N	E-G	88 1/16 (11)	32 1/2	47 3/4 (12)	22
2.02– .687	Alu	9.31	17.50	3	2	2.75–5.03	F	1035	17.75	28.51	7	3.75	AB	AB	C	Pi	1800	Uni	P-S	DeL	46	D-N	E-G	86 1/2	38 1/32	62 1/16 (12)	23
2.12– .687	Alu	9.31	17.50	3	2	2.75–5.28	F	1035	17.75	28.51	7	3.75	AB	AB	C	Pi	1800	Uni	P-S	DeL	46	D-N	E-G	86 1/2	38 1/32	62 1/16 (12)	24
2.16– .687	Alu	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	3.75	AB	AB	C	Pi	1800	Uni	P-S	DeL	46	D-N	E-G	86 1/2	38 1/32	62 1/16 (12)	25
2.16– .687	Alu	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	3.75	AB	AB	C	Pi	1800	.....	P-S	DeL	46	D-N	E-G	114 7/16 (11)	37 1/16	62 1/16 (12)	26
2.16– .687	Alu	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	3.75	AB	AB	C	Pi	1800	Uni	P-S	DeL	46	D-N	E-G	95 3/8	48	62 1/16 (12)	27
.....	Alu	9.18	.....	4	2	2.37–4.75	F	.....	16.00	.....	5	4.00	Own	Own	C	Si	1750	Don	Own	Own	35	Own	G	88	49 1/2	67 13/16	28
.....	Alu	9.18	.....	4	2	2.37–4.75	F	.....	15.00	.....	7	3.75	Own	Own	C	Si	1750	Don	Own	Own	35	Own	G	100 1/2	42 3/4	67 1/16	29
.....	Alu	9.18	.....	4	2	2.37–4.25	F	.....	15.00	.....	7	3.75	Own	Own	C	Si	1750	Don	Own	Own	35	Own	G	100 1/2	42 3/4	67 1/16	30
.....	Alu	9.18	.....	4	2	2.37–4.75	F	.....	15.00	.....	5	3.75	Own	Own	C	Si	1750	Don	Own	Own	35	Own	G	70 1/16	46 5/8	62 1/16	31
.....	Alu	9.18	.....	4	2	2.37–4.25	F	.....	15.00	.....	5	3.75	Own	Own	C	Si	1750	Don	Own	Own	35	Own	G	70 1/16	46 5/8	62 1/16	32
.....	Alu	6.18	.....	3	2	1.75–3.50	F	.....	10.25	.....	7	3.00	Own	Own	C	Si	1500	Don	Own	Own	35	Own	G	67 3/4	28 3/8	52 3/4	33
.....	Alu	6.18	.....	3	2	1.75–3.50	F	.....	10.25	.....	5	3.00	Own	Own	C	Si	1500	Don	Own	Own	35	Own	G	52 3/4	26 7/8	50 1/16	34
.....	Alu	5.56	.....	3	2	1.56–3.00	F	.....	10.25	.....	5	2.75	Own	Own	C	Si	1500	Don	Own	Own	35	Own	G	51	25	47 5/8	35
.....	Alu	6.18	.....	3	2	1.75–3.50	F	.....	10.25	.....	7	3.00	Own	Own	C	Si	1500	Don	Own	Own	35	LN	Ele	59 3/4	28 3/8	42 5/8	36
.....	Alu	6.18	.....	3	2	1.75–3.50	F	.....	10.25	.....	5	3.00	Own	Own	C	Si	1500	Don	Own	Own	35	LN	Ele	46 3/4	28 7/8	42 5/8	37
2.65– .757	Alu	14.00	28.75	4	2	3.25–7.00	R	3140	21.00	54.0†	9	6.00	Own	AB	C	Mu	2500	Op	Pur	Cun	....	Own	Air	128 1/2	30 1/2	66	38
3.75–1.125	Alu	17.17	58.00	5	2	4.00–9.37	R	1040	27.00	135.7†	9	7.50	Own	AB	C	Mu	2500	Op	Pur	Cun	....	Own	Air	158 1/2	42 1/4	83	39
1.37– .406	Ss	5.04	5.40	3	2	1.49–3.37	F	ST-4135-A	9.50	6.6	5	3.87	Own	Own	....	Mu	....	Don	Cun	Nug	50	L-D	Ele	35 7/16 (2)	27 1/16	39 1/16 (3)	40
1.37– .406	Ss	5.04	5.40	3	2	1.49–3.37	F	ST-4135-A	9.50	6.6	7	3.87	Own	Own	....	Mu	....	Don	Cun	Nug	50	L-D	Ele	46 5/8 (2)	28 5/8	39 1/16 (3)	41
1.93– .500	Ss	6.25	10.20	3	2	1.99–4.09	F	ST-4135-A	12.00	10.8	5	4.50	Own	Own	....	Mu	....	Don	Cun	Nug	50	L-D	Ele	41 7/32 (2)	29 5/8	47 1/32 (3)	42
1.93– .500	Ss	6.25	10.20	3	2	1.99–4.09	F	ST-4135-A	12.00	10.8	7	4.50	Own	Own	....	Mu	....	Don	Cun	Nug	50	L-D	Ele	57 7/32 (2)	29 5/8	47 1/32 (3)	43
1.93– .500	Ss	6.25	10.20	3	2	1.99–4.09	F	ST-4135-A	12.00	10.8	7	4.50	Own	Own	....	Mu	....	Don	Cun	Nug	50	L-D	Ele	60 11/32 (2)	30 7/16	47 11/32 (3)	44
....– .375	Alu	5.50	3.13	3	2	1.12–3.25	F	.....	10.31	3.26	7	3.00	Exc	.....	.....	Pi	2000	Uni	Pur	DeL	40	AL	Ele	46	25	45	45
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	3.00	AB	AB	C	Pi	1500	Op	.....	.....	50	.....	.....	.....	.....	.....	46
.....	Cl	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	5.50	AB	AB	C	Pi	1500	Op	.....	.....	50	.....	(6)	.....	.....	.....	47
.....	Cl	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	5.50	Own	Own	C	Mu	3000	Op	.....	.....	45	.....	Air	.....	.....	.....	48
1.25– .375	AT	4.00	7.00	4	2	1.50–3.62	F	T-1340	10.12	5.80	4	3.50	Own	Own	C	Mu	1500	AC	AC	AC	40	DR	Ele	31 11/32	24 3/8	35 1/2	49
1.25– .375	AT	4.00	7.00	4	2	1.50–3.62	F	T-1340	10.12	5.80	5	3.50	Own	Own	C	Mu	1500	AC	AC	AC	40	DR	Ele	38 7/16	24 3/8	37 1/16	50
1.25– .375	AT	4.00	7.00	4	2	1.50–3.62	F	T-1340	10.12	5.80	7	3.50	Own	Own	C	Mu	1500	AC	AC	AC	40	DR	Ele	50 7/8	24 1/16	37 1/16	51
1.25– .375	AT	6.00	7.00	4	2	1.50–3.62	F	T-1340	10.12	6.12	7	3.50	GM	GM	C	Mu	....	AC	AC	AC	40	DR	Ele	73 3/8	30 5/8	37 1/2	52
1.12– .375	Alu	4.84	3.56	4	2	1.18–3.20	F	CNM	8.00	5.31	2	3.00	AB	AB	C	Pi	1650	.....	.....	.....	45	DR	E-H	27 11/16 (2)	16 5/8	36 1/4	53
1.12– .375	Alu	4.84	4.00	4	2	1.18–3.45	F	CNM	8.00	5.31	2	3.00	AB	AB	C	Pi	1650	.....	.....	.....	45	DR	E-H	27 11/16 (2)	16 5/8	36 1/4	54
1.12– .375	Alu	4.84	4.47	4	2	1.18–3.70	F	CNM	8.00	5.31	2	3.00	AB	AB	C	Pi	1650	.....	.....	.....	45	DR	E-H	27 11/16 (2)	16 5/8	36 1/4	55
1.12– .375	Alu	4.84	3.56	4	2	1.18–3.20	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	E-G	32 1/16 (2)	22 7/8	36	56
1.12– .375	Alu	4.84	4.00	4	2	1.18–3.45	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	E-G	32 1/16 (2)	22 7/8	36	57
1.12– .375	Alu	4.84	4.47	4	2	1.18–3.70	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	E-G	32 1/16 (2)	22 7/8	36	58
1.12– .375	Alu	4.84	3.12	4	2	1.18–2.95	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	E-G	39 (2)	22 1/16	32 1/4	59
1.12– .375	Alu	4.84	3.56	4	2	1.18–3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	.....	.....	.....	.....	45	L-D	E-G	39 (2)	22 1/16	32 1/4	60
1.25– .395	Alu	4.84	4.00	4	2	1.18–3.45	F	CNM	8.50	.....	7	3.50	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	Ele	46 11/32 (2)	25 3/4	36 1/2	61
1.25– .395	Alu	4.84	4.47	4	2	1.18–3.70	F	CNM	8.50	.....	7	3.50	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	Ele	46 11/32 (2)	25 3/4	36 1/2	62
1.37– .395	Alu	6.84	7.09	4	2	1.62–3.75	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	E-G	46 7/16 (2)	27	38 3/8	63
1.37– .395	Alu	6.84	7.69	4	2	1.62–3.93	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	E-G	46 7/16 (2)	27	38 3/8	64
1.62– .500	Alu	7.53	9.94	4	2	2.00–4.18	F	CNM	12.00	13.00	7	3.75	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	E-G	55 7/16 (2)	29 1/4	44 1/4	65
1.62– .500	Alu	7.53	11.69	4	2	2.00–4.65	F	CNM	12.00	13.00	7	3.75	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	E-G	55 7/16 (2)	29 1/4	44 1/4	66
1.62– .500	Alu	7.53	9.94	4	2	2.00–4.18	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	1650	.....	.....	.....	45	L-D	Ele	62 23/32 (2)	30 5/8	46 3/4	67
1.62– .500	Alu	7.53	11.69	4	2	2.00–4.42	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	.....	.....	.....	.....	45	L-D	Ele	62 23/32 (2)	30 5/8	46 3/4	68
1.62– .500	Alu	7.53	12.37	4	2	2.00–4.65	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	.....	.....	.....	.....	45	L-D	Ele	62 23/32 (2)	30 5/8	46 7/16	69
1.12– .375	Alu	4.84	4.00	5	1	.....	.....	CNM	8.00	5.31	2	.....	AB	AB	C	Pi	1650	AC	Pur	DeL	....	DR	Ele	41 3/16	23	30 3/8	70
1.12– .375	Alu	4.84	4.00	5	1	.....	.....	CNM	8.00	5.31	.....	.....	AB	AB	C	Pi	1650	AC	Pur	Pur	....	DR	Ele	47 3/4	22 1/2	33	71
1.12– .375	Alu	4.84	3.56	5	1	.....	.....	CNM	8.00	5.31	.....	.....	AB	AB	C	Pi	1650	AC	Pur	Pur	....	DR	Ele	54 1/16	22 1/2	33	72
1.37– .395	Alu	6.84	7.09	5	1	.....	.....	CNM	9.37	8.59	.....	.....	AB	AB	C	Pi	1650	AM	Pur	Pur	....	DR	Ele	60 1/16	27 5/8	37 11/16	73
1.62– .500	Alu	7.53	9.94	5	1	.....	.....	CNM	12.00	13.00	.....	.....	AB	AB	C	Pi	1650	AM	Pur	Pur	....	DR	Ele	76 5/16	31	45	74
1.50– .418	Alu	5.29	4.57	3	2	1.43–3.60	F	4130	10.50	4.87	7	3.50	AB	Exc	C	Pi	1400	Vor	Pur	DeL	46	LN	Ele	27 7/16	46	50 11/16	75
1.64– .500	Alu	5.75	4.61	4	1	1.43–3.78	F	4130	11.25	6.30	7	3.50	AB	AB	C	Pi	1700	Vor	Pur	Own	46	LN	Ele	53 3/8	31 7/8	47 1/4	76
1.64– .500	Alu	5.62	6.30	3	2	1.62–4.17	F	4130	11.25	7.13	7	3.50	AB	AB	C	Pi	1700	Vor	Pur	Own	46	LN	Ele	29 7/8	47 1/2	53 3/32	77

(For abbreviations see pages 254-255)

Automotive Diesel and

Line Number	ENGINE MAKE AND MODEL	Built Under License from	GENERAL															VALVES	
			Designed for	Type	Number of Cylinders Bore and Stroke (In.)	Cycle	Piston Displacement (Cu. In.)	With Bare Engine: Maximum Brake Hp. at Specified R.P.M.	With Standard Accessories: Max. Intermittant Hp. at Specified R.P.M.	With Standard Accessories: Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio - to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	Arrangement	Intake Port Diameter and Lift (In.)
1	Murphy ME-4	Own	M,I	DI	4-5¾x6½	4	675		104-1200	83-1200	17.00		81	76.5	472-900	4500	6350	VI	1.62- .500
2	Murphy ME-6	Own	M,I	DI	6-5¾x6½	4	1013		160-1200	128-1200	17.00		83	59.0	735-875	5550	7550	VI	1.62d-.500
3	Murphy ME-650	Own	M,I	DI	6-5¾x6½	4	1013		200-1200	160-1200	17.00		104	49.4	960-800	5900	7900	VI	1.62- .500
4	Red Wing 35-40HP	Wau-Hes	M	DI	4-3¾x4¾	4	210	45-2000	42-2000	35-1500	6.25	450	88	24.3	122-1200		850	VI	1.62- .375
5	Red Wing 55-60HP	Wau-Hes	M	DI	4-4⅜x5¼	4	353	62-1600	59-1600	55-1400	6.20	450	88	21.8	230-800		1200	VI	1.75- .450
6	Red Wing 80-90HP	Wau-Hes	M	DI	4-6x6½	4	735	98-1200	95-1200	88-1050	5.60	450	90	26.1	338-600		2300	VI	2.37- .580
7	Red Wing 65-75HP	Wau-Hes	M	DI	6-3x4¼	4	282	78-2800	75-2800	59-1800	6.40	450	92	16.1	174-1400		950	VI	1.62- .375
8	Red Wing 120-125HP	Wau-Hes	M	DI	6-4½x5½	4	525	128-2100	125-2100	106-1500			107	17.0	370-1500		1800	VI	1.62- .445
9	Red Wing 160-180HP	Wau-Hes	M	DI	6-6½x7	4	1395	174-1125	170-1125	165-1050	5.60	450	89	33.9	900-550		5800	VI	2.50- .710
10	Red Wing 180-200HP	Wau-Hes	M	DI	6-7x7	4	1616	200-1125	196-1125	188-1050	5.50	450	87	30.8	1030-550		5800	VI	2.50- .710
11	Reo 6DT-294	Buda-Lan	T	AC	6-3⅝x4¾	4	294	75-2400			14.50	725	76		212-1400			VI	
12	Reo 6DT-317	Buda-Lan	T	AC	6-3⅝x5⅛	4	317	78-2300			14.50	725	73		195-1400			VI	
13	Scripps 7000-1-2-3	Hercules	M	TC	4-4x4½	4	226	70-2600	60-2600	47-1800	14.50	750	91		162-1400	750		VI	1.62- .375
14	Scripps 8500-1-2-3	Hercules	M	TC	6-3¾x4½	4	298	83-2600	71-2600	59-1800	14.50	750	87		208-1500	875		VI	1.62- .375
15	Stover SL7	Lanova	M,I	AC	1-3⅞x5¼	4	61.9	10.5-1200	9-1200	7.5-1200	15.50	800	80	104.0	46-1200	835	780	VI	1.50- .375
16	Stover SL10	Lanova	M,I	AC	1-4⅞x5¼	4	81.2	13-1200	11.5-1200	10-1200	14.75	800	81	78.0	57-1200	835	780	VI	1.50- .375
17	Stover SL15	Lanova	M,I	AC	2-3⅞x5¼	4	123.8	21-1200	18-1200	15-1200	15.50	800	80	80.0	92-1200	1340	1200	VI	1.50- .375
18	Stover SL20	Lanova	M,I	AC	2-4⅞x5¼	4	162.4	26-1200	23-1200	20-1200	14.75	800	81	60.0	113-1200	1340	1200	VI	1.50- .375
19	Superior A-2	Own	M,I	TC	2-4½x5¾	4	183		29-1400	21-1200	11.80	675	76	64.3	134-1200		1350	VI	1.87- .432
20	Superior A-4	Own	M,I	TC	4-4½x5¾	4	366		62.5-1500	42-1200	11.80	675	76	44.6	268-1200		1875	VI	1.87- .432
21	Superior A-6	Own	M,I	TC	6-4½x5¾	4	549		110-1800	62.5-1200	11.80	675	75	38.4	400-1200		2400	VI	1.87- .432
22	Superior A-8	Own	M,I	TC	8-4½x5¾	4	732		150-1800	84-1200	11.80	675	76	38.1	535-1200		3200	VI	1.87- .432
23	Superior D-4	Own	M,I	TC	4-5½x7	4	665		90-1200	76-1200	11.80	750	75	36.0	328-1200		3500	VI	2.25- .675
24	Superior D-6	Own	M,I	TC	6-5½x7	4	998		170-1500	114-1200	11.80	750	76	27.3	727-1000		4250	VI	2.25- .675
25	Superior D-8	Own	M,I	TC	8-5½x7	4	1330		230-1500	152-1200	11.80	750	75	34.9	985-1000		5300	VI	2.25- .675
26	Waukesha 130HS	Hesselman	T,Tr,I	DI	4-3¾x5	4	221	48-2200	36-2000	28-1500	6.12	500	67	24.8♣	142-1000	695		VI	1.62- .445
27	Waukesha 130HL	Hesselman	T,Tr,I	DI	4-4x5	4	251	55-2200	42-2000	31-1500	5.90	500	65	22.7♣	155-1000	705		VI	1.62- .445
28	Waukesha VRZH	Hesselman	T,Tr,I	DI	4-4⅝x5¼	4	353	59-1600	47-1600	39-1400	5.60	500	62	26.9♣	229-700	1050		VI	1.75- .450
29	Waukesha 6BKH	Hesselman	T,B,I	DI	6-3¾x4¼	4	282	83-2800	54-2500	41.5-1800	6.40	500	65	18.1♣	174-1400	750		VI	1.62- .375
30	Waukesha 140HS	Hesselman	T,B,I	DI	6-4¼x5½	4	468	111-2250	89-2000	70-1500	5.80	500	79	20.0♣	342-1000	1400		VI	1.87- .531
31	Waukesha 140HK	Hesselman	T,B,I	DI	6-4½x5½	4	525	124-2250	101-2000	78-1500	5.80	500	78	18.5♣	383-1000	1440		VI	1.87- .531
32	Waukesha 145HS	Hesselman	T,B,I	DI	6-4¾x6	4	638	124-2000	98-1800	80-1400	5.60	500	71	24.4♣	434-800	1950		VI	1.87- .594
33	Waukesha 145HK	Hesselman	T,B,M,I	DI	6-5¼x6	4	779	150-2000	120-1800	99-1400	5.60	500	72	20.0♣	531-800	1980		VI	1.87- .594
34	Waukesha 6WALH	Hesselman	T,B,M,I	DI	6-5¾x6½	4	1013	172-1800	135-1600	112-1300	5.70	500	67	28.1♣	686-700	3150	3885	VI	2.37- .650
35	Waukesha 6WAKH	Hesselman	T,B,M,R,I	DI	6-6¼x6½	4	1297	202-1800	162-1600	135-1300	5.20	500	63	23.7♣	811-700	3200	3935	VI	2.37- .650
36	Waukesha 6ELH	Hesselman	I	DI	6-6½x7	4	1395	171-1125	131-1125	117-1050	5.40	500	63	51.1♣	900-500	5975		VI	2.50- .710
37	Waukesha 6EKH	Hesselman	I	DI	6-7x7	4	1616	196-1125	154-1125	136-1050	5.30	500	63	44.1♣	1030-500	6000		VI	2.50- .710
38	Waukesha 6NKH	Hesselman	M,I	DI	6-7x8½	4	1962	226-1050	187-1050	160-950	5.20	500	68	45.5	1350-650	6200	7280	VI	2.50- .710
39	Waukesha 6LRH	Hesselman	M,R,I	DI	6-8½x8½	4	2894	333-1050	277-1050	225-900	4.80	500	68	41.6		7950	9350	VI	3.25- .710
40	Witte AD		I	PC	1-3¼x4½	4	37.3	5.2-1500	4.5-1200	4-1200	19.00	800	71	150.0♣		600		VI	1.31- .298
41	Witte LD		I	PC	1-4¼x5¼	4	74.4	14-1500	11-1200	9-1200	17.00	750	80	101.0♣	49-1500	910		VI	1.75- .422
42	Witte 4LD		I	PC	4-4¼x5¼	4	293	51.5-1400	40-1200	36-1200	17.00	750	80	50.0♣		1800		VI	1.75- .422
43	Witte MD		I	PC	1-5x8	4	157	15.6-800	14-720	12-720	16.00	800	84	116.7♣		1400		VI	1.87- .415
44	Witte KD		I	PC	1-4¼x6	4	85	7.9-900	7.5-850	6-850	16.00	800	66	166.7♣		1000		HI	1.56- .381

ABBREVIATIONS

■—Without fan or muffler
♣—Based on automotive or industrial weight, all others on marine.
•—Marine only
†—Includes piston pin
(1)—Also built in 3 and 6 cylinder models
(2)—Fan to flywheel housing
(3)—To top of water outlet (highest point)
(4)—Also built in 1, 2, 3, 4 and 8 cylinder models
(5)—Also built in 8 cylinder model
(6)—Air, electric or auxiliary gasoline engine
(7)—Also built in 1, 2, 3 and 4 cylinder models
(8)—Rating for marine work boats
(9)—With reduction gear
(10)—Cast iron to 1600 R.P.M., aluminum above 1600 R.P.M.
(11)—Includes radiator
(12)—From bottom of pan to air cleaner mounting flange
A—Air
AB—American Bosh
AC—Air chamber
AC—AC Spark Plug Co.
Al—Alloy iron
AL—Electric Auto-Lite Co.
Alu—Aluminum
AM—Air-Mase Corp.
AT—Arma Steel, tin plated
B—Buses
B-P—Bosh or Purolator
Bur—Burgess
C—Cars
C—Closed
CI—Cast Iron
CNM—Chrome-nickel molybdenum
Cun—Cuno Engineering Corp.
d—dual

DIESEL ENGINE

Type, Number, Rated Horsepower and Value*

Type	Number	Rated Hp. Capacity	Value
Internal combustion engines:			
Injection engines—			
Compression-ignition (Diesel)			
Marine—for direct connection to propeller shaft	647	115,051	$4,291,187
Marine—for electric drive and auxiliary use	233	63,126	3,855,918
Marine—for connection to propeller shaft by reduction gearing	908	156,336	5,543,257
Other Diesel:			
Stationary	6,699	667,802	16,764,359
For installation in contractors', agricultural and other portable and semi-portable equipment	349	32,041	982,783
Other (tractor, truck, railway Diesel-electric)	8,843	775,414	11,466,191
Surface-ignition and spark-ignition	1,137	72,772	1,232,970

* Not including engines made for installation in ships, boats and tractors built by the same establishment.
† Census of Manufactures—Bureau of Census.

Other Heavy Oil Engines—*Concluded*

VALVES		PISTONS				PISTON PINS		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM										STARTING METHOD		OVER ALL DIMENSIONS			
Exhaust Port Diameter and Lift (In.)	Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked In—	Material (S.A.E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifices	Pressure—Nozzle Opening (Lb. per Sq. In.)	Air Cleaner—Make	Fuel Filter—Make	Lubricant Filter—Make	Minimum Recommended Cetane Number of Fuel	Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)	Line Number
1.62– .500	GI	7.75	22.00	4	2	2.12-4.73		1035	12.50	15.25	7	4.00	Own	Own		Mu	1500	Don	OP	Pur		DR	Ele	56 7/16	38 1/16	53 1/4	1
1.62d–.500	GI	7.75	22.00	4	2	2.12-4.73	F	1035	12.50	15.25	7	4.00	Own	Own		Mu	1500	Don	OP	Pur	50	DR	Ele	73 7/16	38 1/16	59 3/4	2
1.62– .500	GI	7.75	22.00	4	2	2.12-4.73		1035	12.50	15.25	7	4.00	Own	Own		Mu	1500	Don	OP	Pur		DR	Ele	74 7/16	38 1/16	54 1/16	3
1.25– .375	CI	4.56	3.80	3	1	1.11–		1020	8.75	2.87	3	2.35	AB	Vik	O	Mu	1200		Pur	Mic	60	DR	Ele	43 7/16	20 1/2	35 1/16	4
1.50– .450	CI	5.96	6.00	3	1	1.31–		1020	10.50	5.30	3	2.37	AB	Vik	O	Mu	1200		Pur	Mic	60	AL	Ele	52 1/16	21 1/4	38 1/16	5
1.75– .580	CI	8.18	15.80	3	1	1.37–		1045	13.25	9.30	3	3.00	AB	Vik	O	Mu	1200		Pur	Mic	60	DR	Ele	69	37	48 1/16	6
1.25– .375	Alu	4.87	2.56	3	1	1.00-3.18	F	1045	8.00	2.56	7	2.62	AB	Vik	O	Mu	1200		Pur	Mic	60	DR	Ele	53 1/16	23 1/16	31 1/16	7
1.25– .453	CI			3	1	1.37-3.87	F	1045			7	3.00	AB	Vik	O	Mu	1200			Mic	60	DR	Ele	78 3/8	29	41 1/16	8
2.25– .710	CI	9.25	20.50	3	1	2.00-5.50	F	1045	15.37	19.00	7	3.75	AB	Vik	O	Mu	1200	Vor	Pur	DeL	60	DR	Ele	100 1/16	30 1/2	56 1/16	9
2.25– .710	CI	9.25	24.75	3	1	2.00-6.00	F	1045	15.37	19.00	7	3.75	AB	Vik	O	Mu	1200	Vor	Pur	DeL	60	DR	Ele	100 1/16	30 1/2	56 1/16	10
	Alu	4.93		4	1	1.25-2.75		1035	9.50	3.41	7	3.00			C	Pi	2000				46			42 3/16	25 1/2	36 1/16	11
	Alu	4.93		4	1	1.25-2.90		1035	9.50	3.41	7	3.00			C	Pi	2000				46			42 3/16	25 1/2	36 1/16	12
1.12– .375	Alu	4.84	4.00	4	2	1.18-3.45	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650				45	L-D	E-G	32 1/16	22 1/16	36	13
1.12– .375	Alu	4.84	3.56	4	2	1.18-3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi					45	L-D	E-G	39	22 1/16	32 1/4	14
1.50– .375	Alu	6.50	4.25	3	2	1.37-3.43	F	3135	11.75	6.00	2	2.62	AB	AB	C	Pi	2000	Vor	AB	DeL		DR	E-H	23 1/2	24	46 1/4	15
1.50– .375	Alu	6.50	5.00	3	2	1.37-4.00	F	3135	11.75	6.00	2	2.62	AB	AB	C	Pi	2000	Vor	AB	DeL		DR	E-H	23 1/2	24	46 1/4	16
1.50– .375	Alu	6.50	4.25	3	2	1.37-3.43	F	3135	11.75	6.00	3	2.62	AB	AB	C	Pi	2000	Vor	AB	DeL		DR	Ele	31	30 5/8	38	17
1.50– .375	Alu	6.50	5.00	3	2	1.37-4.00	F	3135	11.75	6.00	3	2.62	AB	AB	C	Pi	2000	Vor	AB	DeL		DR	Ele	31	30 5/8	38	18
1.50– .483	CI	6.68	9.40	4	2	1.75-3.50	F	4145	11.50	9.25	3	3.50	AB	AB	C	Pi	1600	Bur	Pur	Pur	50	LN	Ele				19
1.50– .483	CI	6.68	9.40	4	2	1.75-3.50	F	4145	11.50	9.25	5	3.50	AB	AB	C	Pi	1600	Bur	Pur	Pur	50	LN	Ele				20
1.50– .483	(10)	6.68	9.40	4	2	1.75-3.50	F	4145	11.50	9.25	7	3.50	AB	AB	C	Pi	1600	Bur	Pur	Pur	50	LN	Ele				21
1.50– .483	(10)	6.68	9.40	4	2	1.75-3.50	F	4145	11.50	9.25	9	3.50	AB	AB	C	Pi	1600	Bur	Pur	Pur	50	LN	Ele				22
1.87– .620	Alu	8.00	9.41	3	2	2.12-4.50	F	1040	14.25	18.13	5	4.50	AB	AB	C	Pi	1600	Bur	Pur	Pur	50	LN	Ele				23
1.87– .620	Alu	8.00	9.41	3	2	2.12-4.50	F	1040	14.25	18.13	7	4.50	AB	AB	C	Pi	1600	Bur	Pur	Pur	50	LN	Ele				24
1.87– .620	Alu	8.00	9.41	3	2	2.12-4.50	F	1040	14.25	18.13	9	4.50	AB	AB	C	Pi	1600	Bur	Pur	Pur	50	LN	Ele				25
1.25– .453	CI	5.12	3.60	3	1	1.12-3.06	F	1045	8.75	3.56	3	2.62	AB	Hes	O	Mu	1200	Op	Mic	Mic		Op	E-H	33 1/16	21 1/2	38 1/4	26
1.25– .453	CI	5.12	4.30	3	1	1.12-3.06	F	1045	8.75	3.56	3	2.62	AB	Hes	O	Mu	1200	Op	Mic	Mic		Op	E-H	33 1/16	21 1/2	38 1/4	27
1.50– .450	CI	5.96	6.00	3	1	1.31-4.06	F	1045	10.50	5.31	3	2.37	AB	Hes	O	Mu	1200	Op	Mic	Mic		Op	E-H	39 1/16	25 3/4	27 1/2	28
1.25– .375	Alu	4.87	2.56	3	1	1.00-3.50	F	1045	8.00	3.50	7	2.62	AB	Hes	O	Mu	1200	Op	Mic	Mic		Op	E-H	39 1/2	25 3/4	35 1/16	29
1.37– .469	Alu	6.50	3.75	3	1	1.37-3.62	F	1045	10.25	5.31	7	3.25	AB	Hes	O	Mu	1200	Op	Mic	Mic		Op	Ele	50 5/8	21 1/16	43 1/16	30
1.37– .469	Alu	6.50	4.00	3	1	1.37-3.87	F	1045	10.25	5.31	7	3.25	AB	Hes	O	Mu	1200	Op	Mic	Mic		Op	Ele	50 5/8	21 1/16	43 1/16	31
1.37– .531	Alu	7.25		3	1	1.62-4.37	F	1045	11.75	8.31	7	3.50	AB	Hes	O	Mu	1200	Op	Mic	Mic		Op	Ele	55 1/16	25 3/4	46 1/16	32
1.37– .531	Alu	7.25	6.44	3	1	1.62-4.87	F	1045	11.75	8.31	7	3.50	AB	Hes	O	Mu	1200	Op	Mic	Mic		Op	Ele	55 1/16	25 3/4	46 1/16	33
2.00– .656	CI	8.37	16.40	3	1	1.87-5.00	F	1045	13.25	12.20	7	4.00	AB	Hes	O	Mu	1200	Op	Mic	DeL		Op	E-G	65 5/16	28	51 1/2	34
2.00– .656	Alu	8.37	11.00	3	1	1.87-5.50	F	1045	13.25	12.20	7	4.00	AB	Hes	O	Mu	1200	Op	Mic	DeL		Op	E-G	65 5/16	28	51 1/2	35
2.25– .710	CI	9.25	20.50	3	1	2.00-5.50	F	1045	15.37	19.60	7	3.75	AB	Hes	O	Mu	1200	Op	Mic	DeL		Op	E-G	76 5/16	32 3/4	56 1/4	36
2.25– .710	CI	9.25	24.75	3	1	2.00-6.00	F	1045	15.37	19.60	7	3.75	AB	Hes	O	Mu	1200	Op	Mic	DeL		Op	E-G	76 5/16	32 3/4	57 1/16	37
2.25– .710	CI	9.25	24.75	3	1	2.00-6.00	F	1045	15.37	19.60	7	3.75	AB	Hes	O	Mu	1200	Op	Mic	DeL		Op	E-G	76 5/16	32 3/4	57 1/16	38
2.75– .710	CI	11.65	50.00	4	1	2.25-7.75	F	1045	20.87	34.70	7	4.25	AB	Hes	O	Mu	1200	Op	Mic	Mic		Op	E-G	92 7/16	46 1/2	63 3/4	39
1.18– .298	CI	4.43	3.87	4	1	1.25-2.75	F	1045	8.50	3.18	2	1.87	AB	AB	C	Pi	2300	Bur	Cun	Cun	46	AL	E-H	20 5/16	18	32 1/16	40
1.75– .422	CI	6.12	9.62	4	1	1.75-3.50	F	1045	11.50	6.43	2	2.50	AB	AB	C	Pi	2300	AM	Cun	Cun	46	AL	E-H	27 5/16	21	38 1/16	41
1.75– .422	CI	6.12	9.62	4	1	1.75-3.50	F	1045	11.50	6.43	6	3.00	AB	AB	C	Pi	2300	Yor	Cun	Nug	46	AL	Ele	51	28	44	42
1.87– .415	CI	8.18	15.00	4	2	1.81-4.21	F	1045	18.00	19.87	2	2.50	AB	AB	C	Pi	2300	AM	Cun	Cun	46		Ha	49 1/2	34 5/8	28 7/16	43
1.56– .381	CI	7.25	10.00	4	1	1.25-3.75	F	1045	15.00	10.00	2	2.06	AB	AB	C	Pi	2300	AM	Cun	Cun	46		Ha	40 5/16	30	24 1/16	44

DeL—DeLuxe Products Corp.
DI—Direct injection
D-N—Delco-Remy or Novo
Don—Donaldson Co.
DR—Delco-Remy Div.
E-G—Electric or auxillary gasoline engine
E-H—Electric or hand
Ele—Electric
Exc—Ex-Cell-O Corp. **F**—Floating
G—Auxillary gasoline engine, electric optional
GI—Grey Iron Casting
G. M. Corp—General Motors Corp.
H—Heat Exchanger, marine only
Ha—Hand
Hes—Hesselman
HI—Horizontally In-head
I—Industrial
L-D—Leece Neville or Delco-Remy
LE—Lanova energy cell
LN—Leece Neville Co.
M—Marine
Mic—Michiana Products Corp.
Mu—Multiple
Nug—Nugent
O—Open
OP—Oilpure Refiner Co.
P—Piston
PC—Precombustion chamber
Pi—Pintle
P-S—Purolator or Stewart-Warner
Pur—Purolator Products, Inc.
R—Railcars **R**—Locked in Rod
Si—Single
Ss—Semi-steel (electric furnace)
T—Trucks **TC**—Turbulence chamber
Tr—Tractors
Uni—United Air Cleaner Div.
VI—Vertically In-head
Vik—Viking **Vor**—Vortec
Wau-Hes—Waukesha-Hesselman

PRODUCTION—1939†

Number by Capacity*

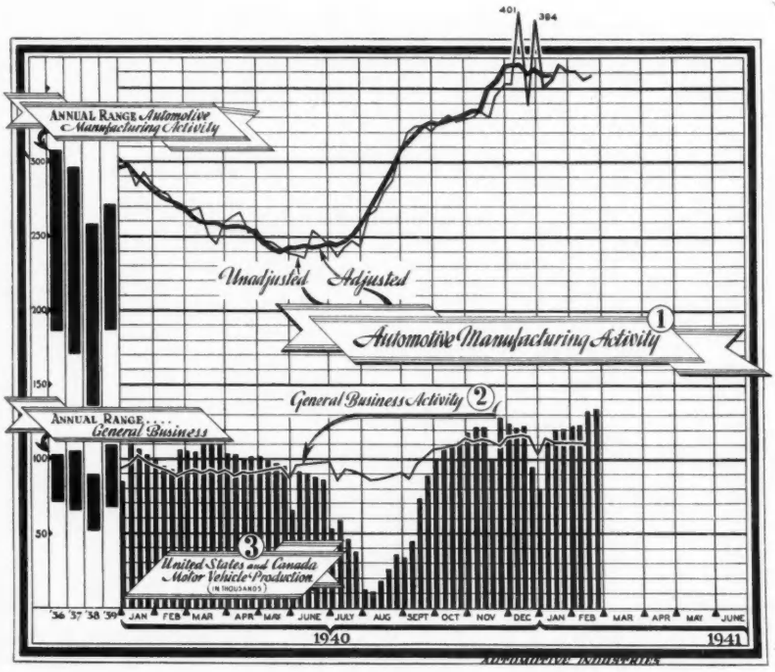
Type	Less Than 5	5 to 9 Inclusive	10 to 19 Inclusive	20 to 49 Inclusive	50 to 99 Inclusive	100 to 199 Inclusive	200 to 399 Inclusive	400 to 599 Inclusive	600 to 999 Inclusive	1000 or More
Internal combustion engines:										
Injection engines—										
Compression-ignition (Diesel)										
Marine—for direct connection to propeller shaft	..	..	2	86	169	218	89	52	24	7
Marine—for electric drive and auxiliary use	..	4	31	54	32	23	37	16	23	13
Marine—for connection to propeller shaft by reduction gearing	..	..	6	241	136	465	23	..	13	24
Other Diesel:										
Stationary	..	127	587	1,034	2,494	2,030	250	91	44	42
For installation in contractors', agricultural and other portable and semi-portable equipment	..	..	..	141	73	105	27	1	1	..
Other (tractor, truck, railway Diesel-electric)	..	..	..	2,825	2,917	2,975	16	6	55	49
Surface-ignition and spark-ignition	..	..	173	258	434	253	19	..	..	..

* Not including engines made for installation in ships, boats and tractors built by the same establishment.

† Census of Manufactures—Bureau of Census.

BUSINESS IN BRIEF

Our own view of automotive production and sales; authoritative interpretation of general conditions



Weekly indexes of automotive general business charted

February Output May Pass 1929 Record

PRODUCTION continued at record levels during February as dealers and distributors continued to pile up new car inventories to assure them of adequate stocks for the spring selling season. Output for the month was estimated at 495,000 units, but it was possible that further upward revision of manufacturing schedules would send the total over the 500,000 mark and eclipse the February record of 497,706 vehicles established in 1929, despite the fact there were only 20 working days in the month.

Although the shortages of zinc, nickel and stainless steel are felt by the automobile manufacturers, they are not likely to affect production of 1941 models. However, companies are experimenting with substitutes for chrome trim for possible use on the 1942 models, which may have steel stampings employed for grilles and plastics for ornamentation.

Production was approximately 123,500 units for the week ending Feb. 22. General Motors divisions manufactured 53,800 vehicles, led by Chevrolet, which was assembling more than 30,000 units weekly to compile the best production month in its history. Buick also was approaching a peak of 9000 cars per week. Chrysler divisions accounted for 28,700 units, while Ford turned out 25,600. Studebaker maintained a steady production schedule to top the independents, followed by Nash, Hudson and Packard.

Retail passenger car sales in 105 principal cities for the first 24 days of January showed a 15 per cent gain over the same period of 1940, according to R. L. Polk & Co. Ford-Mercury January sales were the best since 1937, registering a 23 per cent increase over January, 1940, and the final 10-day period was the best for that part of the month since 1929. Ford-Mercury used car sales were the highest for January in their history.

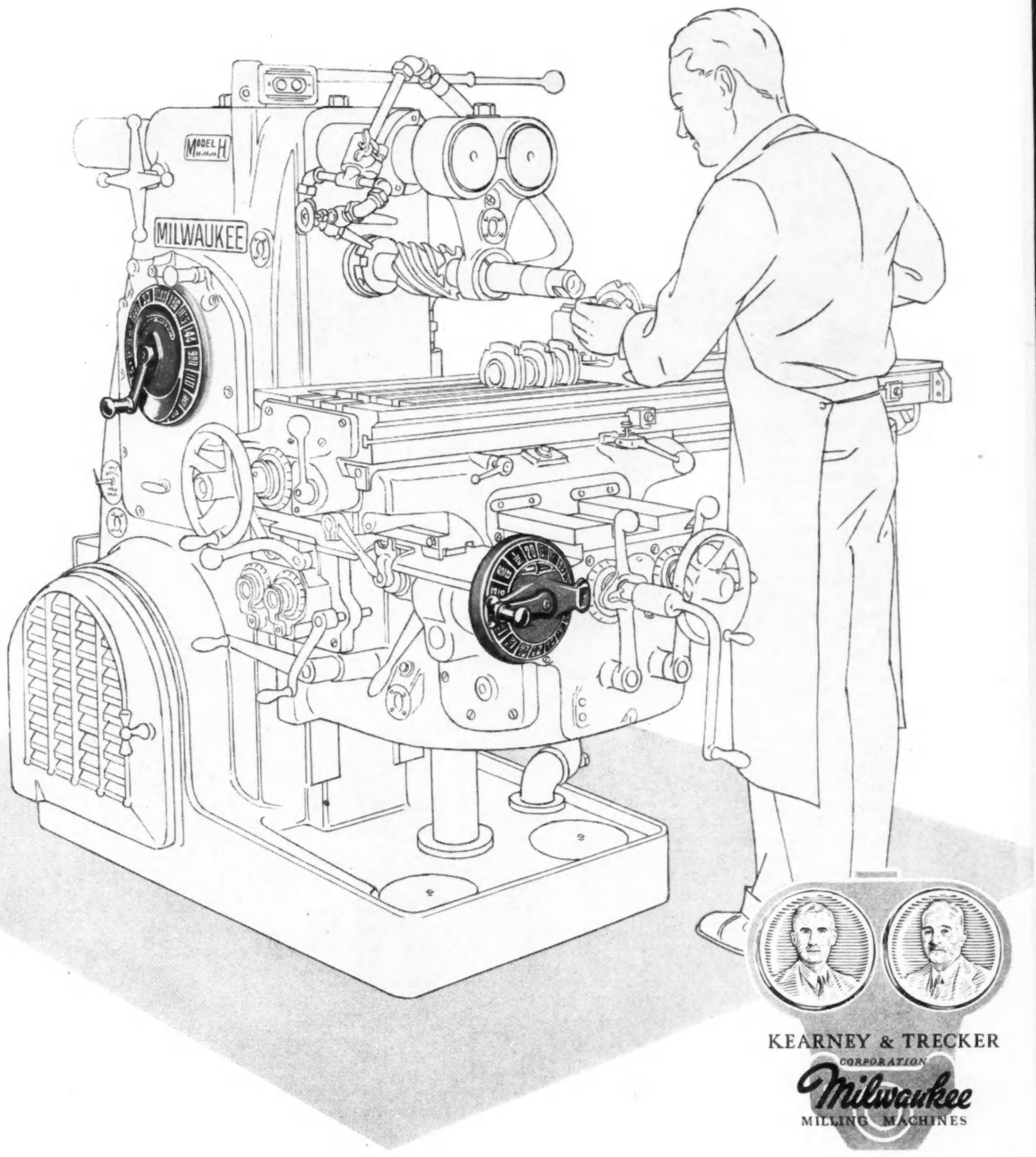
Studebaker retail sales in January set a new record for the month, being 38 per cent higher than in 1940, while Nash consumer deliveries jumped 75 per cent over the previous year. Much of this winter buying was viewed as anticipated for fear of higher prices.

January new passenger car sales of 303,303 units, according to the A.M.A., were the largest for that month on record and showed a 27 per cent gain over January, 1940. New truck sales of 68,499 vehicles in January were the largest for any month since April, 1937, and 47 per cent greater than January, 1940.

[1] 1923 average = 100; [2] Prepared by Administrative and Research Corp. New York. 1926 = 100; [3] Estimated at the Detroit office of AUTOMOTIVE INDUSTRIES.

Single lever, direct reading, large diameter, easy-to-see speed and feed dials increase operator efficiency and reduce error.

KEARNEY & TRECKER CORPORATION • Milwaukee, Wis., U. S. A.



KEARNEY & TRECKER
CORPORATION
Milwaukee
MILLING MACHINES

MILWAUKEE MILLING MACHINES

NEWS OF THE INDUSTRY

Far East Tension Starts Wave of Tin Buying Here

Efforts to Hold Prices of Non-Ferrous Metals in Check Continue; Production of Zinc in Mexico Is Increasing

Increasing tenseness of the situation in the Far East and consequent apprehension of a slowing down in tin shipments brought a revival of buying of that metal by automotive and other classes of consumers following a period of several months of utter apathy. Early this week the price of spot Straits tin had advanced approximately $25 a ton over what it was a month ago.

Jesse Jones announced that by Feb. 12, 19,000 tons of the Government's tin purchases through the Metals Reserve Company had been delivered, that 8000 tons were afloat and that 28,000 tons of tin, for which contracts had been signed, remained to be shipped. Reassuring as this showing is, it did not suffice to overcome the anxiety of consumers, who were especially perturbed by news that Singapore, the world's principal tin shipping port, had been mined.

Meanwhile efforts on the home front to hold prices of other non-ferrous metals in check continue unabated. Agitation for higher copper prices by CIO unionists in Michigan's upper peninsula mining region, which is meeting with some support from State authorities, has not affected the policy of the authorities to allocate to all legitimate consumers sufficient South American metal at the prevailing price to satisfy their needs.

Scrap Aluminum Prices

The continuing traffic in scrap aluminum at prices in excess of that nominally quoted for primary metal is becoming more and more of a problem. A 15,000 pound lot of aluminum scrap was sold at the Brooklyn Navy Yard at 19.41 cents a pound, nearly 2½ cents a pound more than the "official" price of new aluminum.

Increased production of zinc in Mexico may alleviate the critically tight situation in that metal, although it will be some time before the effect of this added supply can make itself felt.

Metal producers, who spent millions of dollars to broaden the consumption of their products, while holding their first duty to be that of supplying national defense requirements, are inclined to look upon much of the propaganda for the use of certain substitute materials as prompted by self-interest on the part of potential competitors.

While in part resulting from the

(*Turn to page* 287, *please*)

Government Plans More Tin and Magnesium Plants

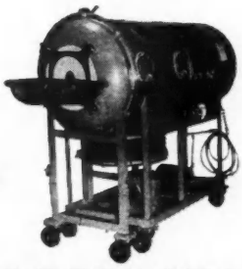
Federal Loan Administrator Jesse Jones has announced a tentative agreement with N. V. Billiton, Moatschapij, the Netherlands East Indies, to construct a Government owned smelter, costing between $2,500,000 and $4,000,000, to smelt about 18,000 tons annually of Bolivian tin recently imported into the United States. The plant will be built "somewhere in the South," Mr. Jones said, giving renewed reports that the site will be Houston, Tex., and will produce about one-fifth of the coun-

(*Turn to page* 287, *please*)

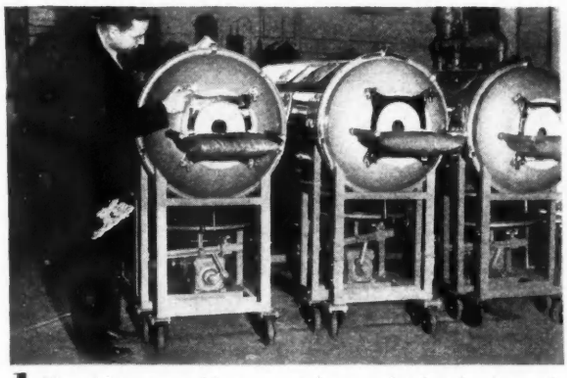
The Brass-Hat Rack

"Miss Hobson, have you borrowed our Boston zone manager?"

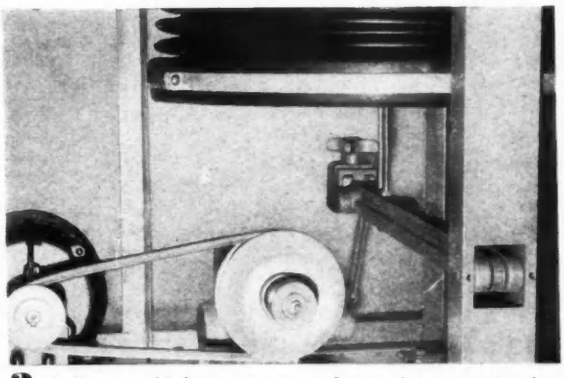
(Advertisement)



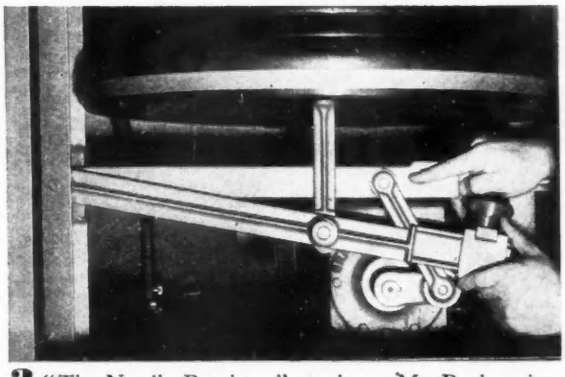
"IRON LUNG" ASSURED QUIET, NEVER-FAILING PERFORMANCE BY TORRINGTON NEEDLE BEARINGS



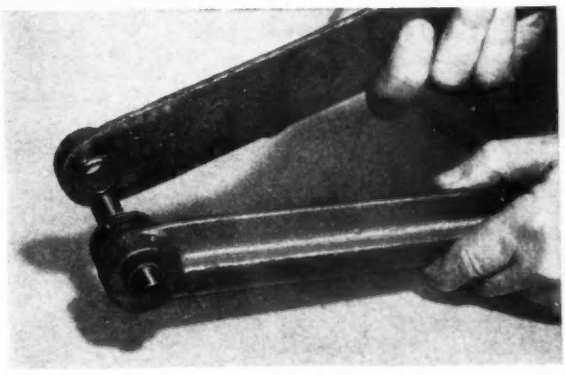
1 Few if any machines must be as absolutely dependable as the famous Drinker-Collins Respirator or "Iron Lung." "Torrington Needle Bearings are used at 4 vital points," says Mr. Herman P. Roth of Warren E. Collins, Inc., the manufacturer, "because they run smoothly and silently day in and day out, year in and year out without attention and without wear."



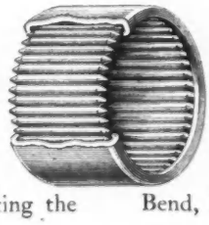
2 Bellows, which produce an intermittent reduction in air pressure, are driven by a stem, two levers, and connecting rod, all of which move on Torrington Needle Bearings. "Needle Bearings perform admirably," Mr. Roth reports. "They were adopted after previous types of bearings gave trouble due to wear, play and noise when in long-continued service."



3 "The Needle Bearings," continues Mr. Roth, pointing to connecting rod bearing which receives the hardest service, "are lubricated at the time of installation and thereafter require little or no attention throughout the life of the machine." Outer race provides large reservoir for storage and retention of grease and oil.



4 Note that the Needle Bearings occupy no more space than plain bushings! Yet these simply designed, lightweight, and inexpensively installed units give antifriction performance at high speeds under both oscillating (as above) and rotating loads in hundreds of modern products.



If you are looking for ways to increase the efficiency of your product, and still keep costs and space requirements low, the Torrington Needle Bearing may be the answer to your problem. Our Engineering Department will be glad to work with you in incorporating the advantages of the Needle Bearing in your product. For more detailed information, write for Catalog No. 107. For Needle Bearings to be used in heavier service, ask our associate, Bantam Bearings Corporation, South Bend, Indiana, for a copy of Booklet 103X.

THE TORRINGTON COMPANY, TORRINGTON, CONN., U. S. A. · ESTABLISHED 1866

Makers of Needle and Ball Bearings

New York Boston Philadelphia Detroit Cleveland Chicago London, England

TORRINGTON NEEDLE BEARING

Army Orders 4000 Trailers For Moving Searchlights

Fruehauf Co. to Build Special Designed Vehicles; Latest Ford Contract Does Not Contain Disputed "Labor Clause"

Furthering its motorization program, the U. S. Army has placed an order for $4,465,040 with the Fruehauf Trailer Co., Detroit, for the manufacture of 4000 new type trailers. These trailers will be of a four-wheel tandem tilting type designed to transport 60-inch anti-aircraft searchlights formerly carried on 2½-ton trucks. A variation of "knee action" will permit the use of the trailers over rough terrain. The Army engineers perfected improvements in this type of trailer at Fort Belvoir, Va.

Ford Motor Co. has been awarded an experimental contract on a negotiated fee basis that it can assemble jigs and other equipment preparatory to the manufacture of subassemblies for Consolidated B-24 bombing planes at a new plant to be built near Bellville, Mich., not far from the Wayne County Airport. Under the program of the Automotive Committee for Air Defense, these subassemblies will be shipped to new government financed plants at Tulsa, Okla., and Fort Worth, Tex., for final assembly. This contract with Ford does not contain the controversial "labor clause" which caused the company to refuse an order for 11,781 Army trucks last month, according to W. S. Knudsen of OPM.

The Defense Plant Corp. has cleared a contract for $1,952,474 with the Murray Corp. of America for machinery and equipment to manufacture airplane wing subassemblies under a subcontract reported at $30,000,000 for Douglas Aircraft Co., Inc. Vickers, Inc., of Detroit, has received a Defense Plant Corp. award of $895,000 for construction and equipping of a building to manufacture hydraulic controls for aircraft. Republic Aircraft Products Division of Aviation Corp. has been granted $532,000 for expanding its Detroit plant facilities in the manufacture of aircraft engine parts.

Autocar Gets $1,248,000 Order

Other new defense orders to automotive plants include $1,248,000 to Autocar Co., Ardmore, Pa., for 412 trucks; $566,950 to Bohn Aluminum and Brass Corp., Detroit, for artillery ammunition components; $124,838 to Yellow Truck & Coach Mfg. Co., Pontiac, for 1½-ton trucks; $101,660 to King Seeley Corp., Ann Arbor, Mich., for eliminators and valves; $480,521 to Chevrolet for trucks; $239,324 to Caterpillar Tractor Co. for tractors; and $113,660 to Mueller Brass Co., Port Huron, Mich., for naval brass.

Acme

Uncle Sam's "Panzer" Might

Massing some of the new U. S. Army mechanized equipment at Fort Benning, Ga., a review of the Second Armored Division was staged for the first time since its formation last summer. Part of the 10,000 men and 2,000 motor vehicles are shown in above picture.

MEN . . . . . .

Addison C. Armstrong, formerly affiliated with the Truscon Steel Co., has joined the Worthington Pump & Machinery Corp.'s organization at its Holyoke, Mass., works as manager of the ordnance division.

Foster P. Whitworth has been named works manager of the Bullard Co., Bridgeport, Conn., succeeding **Thomas E. Dunn,** who has resigned as director and works manager because of ill health.

The 1940 Lamme Medal of the American Institute of Electrical Engineers has been awarded to **Comfort Avery Adams,** consulting engineer, Edward G. Budd Mfg. Co., Philadelphia, for his contributions to the theory and design of alternating current machinery and his work in the field of electric welding.

George A. Green, vice-president in charge of engineering for the Yellow Truck & Coach Mfg. Co., has been appointed consulting engineer to the Secretary of War. He will continue in the capacity of a consultant to Yellow Truck & Coach, while his engineering duties will be assumed by **C. O. Ball,** chief engineer.

George Sherman, formerly with the U. S. Rubber Co., has joined the Wolverine Fabricating & Mfg. Co., Detroit, as sales engineer. **Paul Curran,** former sales engineer, has been put in charge of the development laboratory and product control.

Ralph E. Flanders, president of Jones & Lamson Machine Co., Springfield, Vt., has been named group administrator of the tools and equipment section of the Division of Priorities, Office of Production Management. Mr. Flanders will work in cooperation with **D. S. Kimball,** tools and equipment priority executive, who is in charge of all operations in the section. **W. E. Wickenden,** president of the Case School of Applied Science, has taken up his duties as general products priority executive.

L. P. Saunders, chief engineer, Harrison Radiator Division, General Motors Corp., has been elected a member of the national council of the American Society of Heating and Ventilating Engineers.

Tom Towle, Detroit aeronautical engineer, has been appointed head of the aeronautical engineering section of the aircraft division of the Hudson Motor Car Co.

R. Elmer Minton is sales manager of the Curtiss Propeller Division of the Curtiss-Wright Corp., Caldwell, N. J., succeeding **George C. Rodgers** who has been named management assistant of that division.

Joseph T. Ryerson & Son, Inc., announce the appointment of **James M. Mead** to the position of manager of its Philadelphia plant to replace **Arthur C. Allshul,** who retired after 42 years of continuous service with the company.

Robert E. Fulton has been named general auditor of the Goodyear Tire & Rubber Co., Akron, Ohio.

Forest C. Hile has resigned from the Bendix Products Division of the Bendix Aviation Corp. as a commercial car brake engineer to join the engineering staff of the Warner Electric Brake Mfg. Co., Beloit, Wis.

Changes in the executive and managerial staff of American Foundry Equipment Co., Mishawaka, Indiana, were made recently at the annual meting of directors. **Verne E. Minich,** founder of the company and until recently its president, becomes chairman of the board; **Otto A. Pfaff,** formerly vice president and general manager, is now president and remains in the capacity of general manager; **Leslie L. Andrus,** formerly sales manager, has been elevated to the office of vice president in charge of sales.

Several changes in the sales staff of the mechanical division of the B. F. Goodrich Co. have been made as follows: **A. W. Doran** has been assigned to special duties in connection with railroad and govern-

(*Turn to Page 298, Please*)

ALTER EGO: Literally "one's other self" —the still, small voice that questions. inspires and corrects our conscious action.

Rivets sheared at 96,000 lbs.

Welds are good for 125,000 lbs.

ALTER EGO: See the little union on the right and the big disunion on the left—proving again that "In Union (perfect union) there is strength."

But I'm still nervous about welding. Why don't more people use it? Let's make a survey of welding opinion.

ALTER EGO: Oh, so you want the mob to do your thinking? Don't you realize that the progressive man never waits for the habit-bound crowd? He strikes out for himself—for *prestige, leadership* and *security*—for SUCCESS.

But wasn't this test made by Lincoln for their own promotion?

ALTER EGO: Not at all! It was made by an important builder having the aforementioned qualifications, with the aforementioned SUCCESS.

• •

LINCOLN SUGGESTS: How can *you* take advantage of the economy, light-weight and dependability of arc welded construction? How can you use welding as a *thinking tool* for ingenious automotive designs? The Procedure Handbook of Arc Welding Design and Practice ($1.50 postpaid) gives the answers to these and hundreds of other questions relating to arc welding application. It should be in your reference library.

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LINCOLN "SHIELD-ARC" WELDING THE LINCOLN ELECTRIC COMPANY Cleveland, Ohio

Authoritative Information on Design • Production • Welding Equipment

Industry's Defense Effort Delayed by Labor Strife

Walkout at Motor Wheel Corp. Plants Also Causes Shut-Down at Packard; Inter-Union Rivalry Affects Ford Drive

Efforts of the UAW-AFL to protect its strength in the few automotive plants in which it holds contracts was held responsible for a strike that tied up $4,000,000 in defense orders at the Motor Wheel Corp., Lansing, during February. The 2700 workers at the Motor Wheel plant went on strike Feb. 13 after a month-long series of parleys failed to break a deadlock over the union's demands for a union shop. Fearful of another raid on its membership such as characterized the strike at the Saginaw plant of the Eaton Mfg. Co. in January, the UAW-AFL local refused to compromise on the closed shop issue despite the efforts of a special three-man board of arbitration which was appointed Jan. 17 by Gov. Murray D. Van Wagoner.

The UAW-AFL filed notice of intention to strike Jan. 13, but as Motor Wheel has defense orders for parts for military trucks, machine guns and aircraft, a 30-day cooling off period was required under the State's interpretation of the clause which rates defense work "in the public interest." However, the company tentatively agreed to insert a clause urging all employes who were members of the union to remain in good standing. Meanwhile the UAW-CIO requested an NLRB election at the plant. The continuing contract with the UAW-AFL originally was signed Dec. 11, 1939. A complicating factor was said to be the company's fear that granting of an AFL union shop might cause trouble with plants organized under the UAW-CIO which Motor Wheel supplies with parts.

7500 Idle at Packard

A shortage of wheels supplied by Motor Wheel caused the Packard Motor Car Co. to close down Feb. 21, making 7500 production workers idle, and extension of the strike might similarly affect divisions of Chrysler and General Motors.

After an 18-hr. conference with state and Federal conciliators, Feb. 23, union officials agreed to submit a tentative proposal for settlement to a vote of the membership. Motor Wheel, experiencing the first strike in its history, invited all employes to return to work Feb. 26 in an advertisement in Lansing newspapers.

AFL Local at Ford Plant

Inter-union rivalry also was affecting the organizing drive at the Ford Motor Co. At a meeting of the AFL Executive Council at Miami, Fla., William Green, AFL president, admitted that he had had two conversations with Harry Bennett, Ford personnel director, within the last six months. Green said they discussed the Ford company's attitude toward organized labor, but he emphatically stated that he did not expect a contract to be signed immediately. The AFL has chartered two federal locals in the Ford Rouge and Lincoln plants.

Roy W. Thomas, president of the UAW-CIO, charged that Green was attempting to make a backstairs deal with Ford, recalling conferences held in 1938 between Homer Martin, then president of the UAW-CIO, and Bennett which eventually led to the split in the UAW and the forming of the UAW-AFL under Martin's leadership. Following up Thomas' charges, Michael Widman, Jr., director of the Ford organizing drive for the UAW-CIO, filed a petition with the NLRB Feb. 15 saying that Bennett and the AFL were conspiring to form a company union at Ford through distribution of UAW-AFL membership applications by supervisory employes. Furthering the Ford organizing drive, Philip Murray, president of the CIO, spoke before 4500 unionists at Detroit, Feb. 16.

"It is the business of the U. S. and yourselves to see that Mr. Ford is made a good citizen," Murray told the crowd in a militant speech. "I ask you, beginning with today, to conduct the most intensive, intelligent, constructive

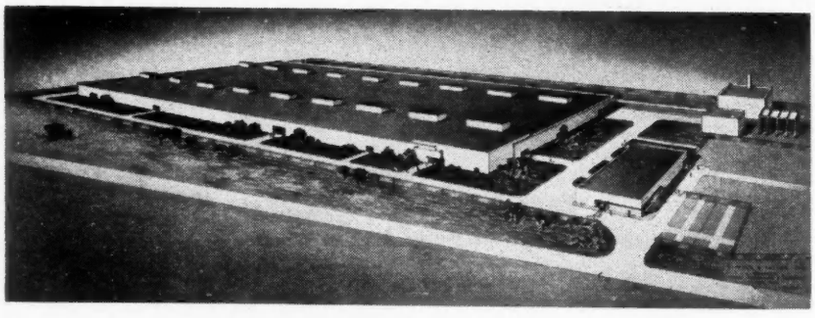
(*Turn to page* 291, *please*)

What Knudsen Said About Outlawing Strikes

At a hearing before the House Judiciary Committee on legislation designed to curb strikes in defense industries, William S. Knudsen, director general of the Office of Production Management, basing his testimony on a statement that the defense program had been hampered "very little" by the lack of cooperation either from capital or labor, turned aside suggestions made by the committee members that strikers should be drafted and forced back to work. "You can't make a man a criminal because he is striking," Mr. Knudsen said.

He held that the Allis-Chalmers strike resulted from "inexperienced leadership" of union officials, adding that such a defect could not be corrected through legislation. Continuing, Mr. Knudsen said:

"Of course, you must realize that the industrial unions which we run up against in carrying through this program are only four or five years old. They haven't had time to train all the leaders they need and to train them sufficiently. But I believe time will cure that. There have been unfortunate and foolish incidents in the past but I think that situation is being straightened out."



Studebaker Aviation Plant

Initial construction has started on Studebaker's Chicago aviation plant, the architect's drawing of which is shown above. It is one of three to be built by Studebaker for manufacturing Wright airplane engines. The others are to be located at Fort Wayne and South Bend.

CALENDAR

Conventions and Meetings

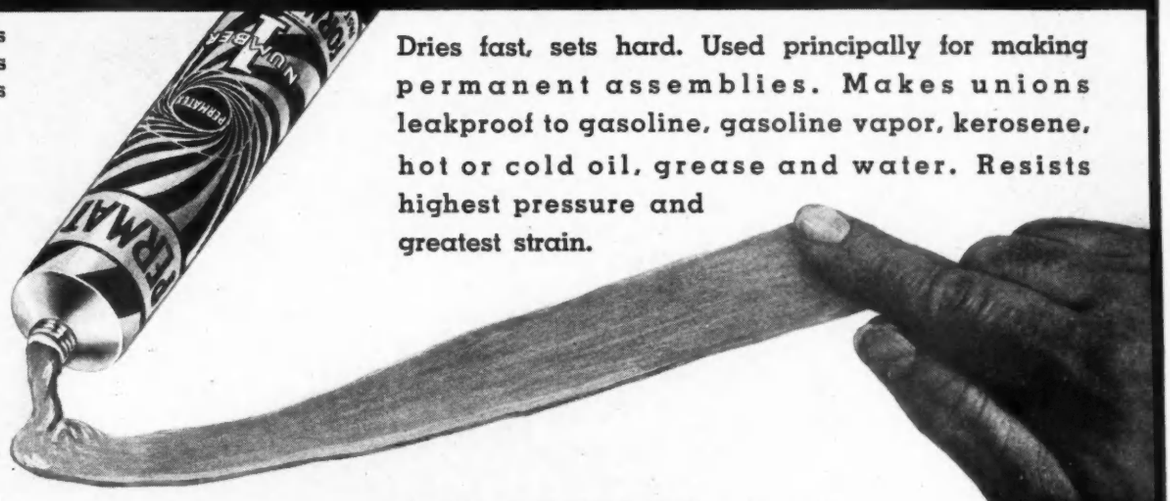
American Society for Testing Materials, Spring Meeting, Washington, D. C., Mar. 4-5
Society of Automotive Engineers, Aeronautical Meeting, Washington, D. C., Mar. 13-14
American Chemical Society, St. Louis., Apr. 7-11
Chamber of Commerce of the U.S.A., Annual Meeting, Washington, D.C., Apr. 29-May 1
Society of Automotive Engineers, Natl. Production Meeting, Milwaukee, May 12-13
Western Metal Exposition and Congress, Los Angeles .....May 19-23
American Battery Manufacturers Assoc., Detroit .....May 22-23
Society of Automotive Engineers, Summer Meeting, White Sulphur Springs, W. Va. .....June 1-6
American Society for Testing Materials, Annual Meeting, Chicago....June 23-27
Society of Automotive Engineers, National Tractor Meeting, Milwaukee, Sept. 25-26
Society of Automotive Engineers, Aircraft Production Meeting, Los Angeles .....Oct. 30-Nov. 1

Shows

National Automobile Trailer Show, Chicago ..... Feb. 22-Mar. 2
Machine & Tool Progress Exhibition, Detroit ..... Mar. 24-29
Automotive Trade & Accessories Show, Boston .....May 1

3 FORM-A-GASKETS *by* PERMATEX

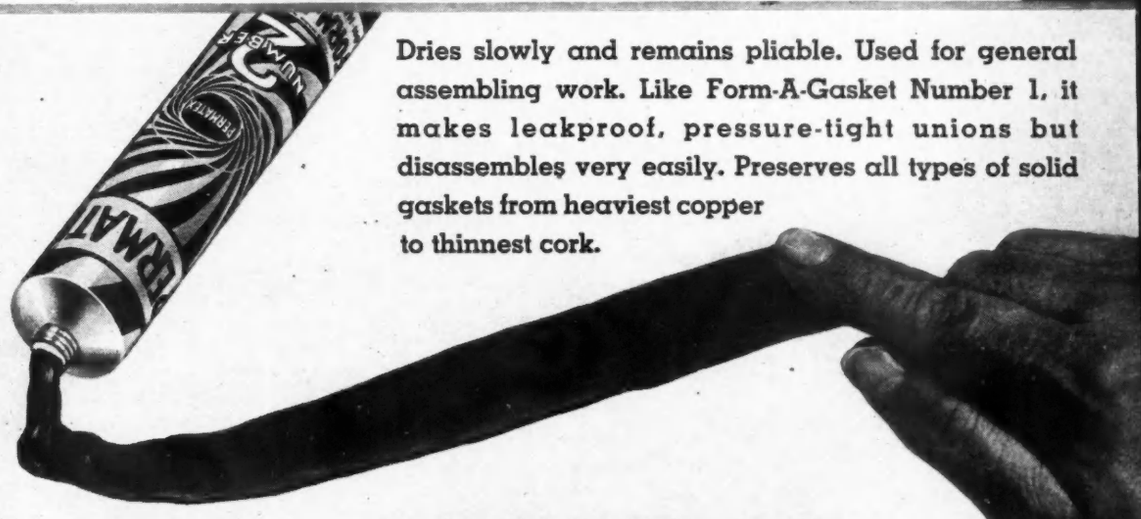
1 Oz. tubes
2 Oz. tubes
8 Oz. tubes



Dries fast, sets hard. Used principally for making permanent assemblies. Makes unions leakproof to gasoline, gasoline vapor, kerosene, hot or cold oil, grease and water. Resists highest pressure and greatest strain.

FORM-A-GASKET Number 1

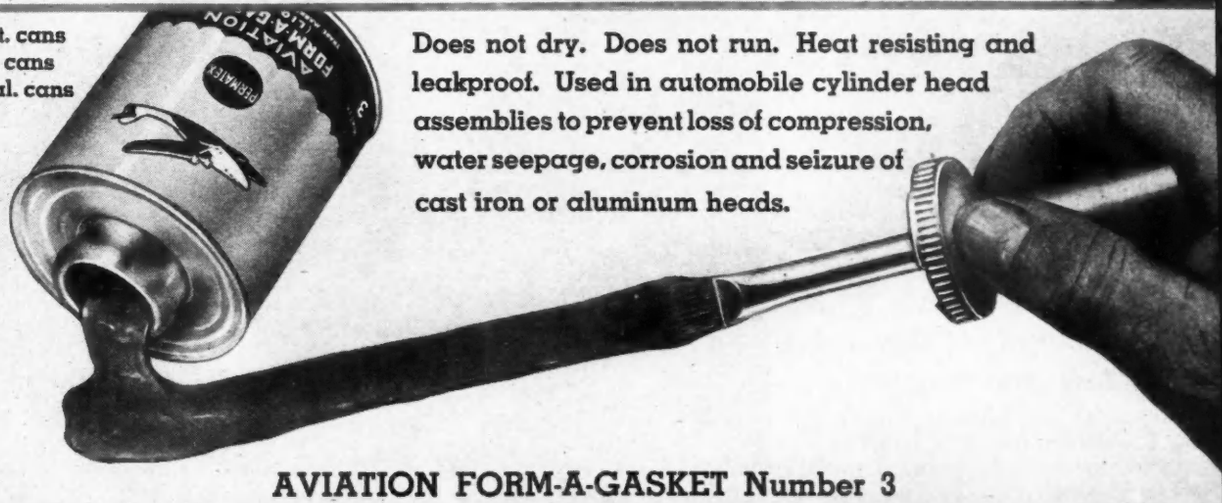
1 Oz. tubes
2 Oz. tubes
8 Oz. tubes



Dries slowly and remains pliable. Used for general assembling work. Like Form-A-Gasket Number 1, it makes leakproof, pressure-tight unions but disassembles very easily. Preserves all types of solid gaskets from heaviest copper to thinnest cork.

FORM-A-GASKET Number 2

¼ Pt. cans
1 Pt. cans
1 Gal. cans



Does not dry. Does not run. Heat resisting and leakproof. Used in automobile cylinder head assemblies to prevent loss of compression, water seepage, corrosion and seizure of cast iron or aluminum heads.

AVIATION FORM-A-GASKET Number 3

PERMATEX COMPANY, INC. Sheepshead Bay, N. Y. U.S.A.

Business in Brief

***Written by the Guaranty Trust Co., New York, Exclusively for* AUTOMOTIVE INDUSTRIES**

Some recession from the recent peak of business activity appeared in February. The seasonally adjusted index of The New York *Times* for the week ended Feb. 8 fell to 121.1 per cent of the estimated normal, as against 122.5 for the preceding week and 103.6 a year ago. The unadjusted index of *The Journal of Commerce* for the same period dropped six fractional points to 115.7 per cent of the 1927-29 average, as compared with 97.7 for the corresponding week last year.

Retail trade expansion continued during the week ended Feb. 12, according to Dun & Bradstreet, with estimated sales averaging from nine to 15 per cent above comparable 1940 figures. Department store sales during the week ended Feb. 8 were 19 per cent greater than a year ago, according to the Federal Reserve compilation.

Slightly more than the usual seasonal decline in railway freight movement was reported for the week ended Feb. 8. Loadings totaled 710,196 cars as against 714,323 cars in the preceding week and 627,429 cars in the corresponding period last year.

Electric power production in the same week registered further moderate recession, but was 11.9 per cent greater than a year ago; the similar gain for the preceding week was 11.3 per cent.

Bank debits to deposit accounts, except inter-bank accounts, in leading cities for the week ended Feb. 12 were virtually the same as a year ago. The total for the 13-week period ended on that date is nine per cent above that a year earlier.

Crude oil production for the week ended Feb. 15 averaged 3,638,100 barrels daily, 20,450 barrels more than the average for the previous week and exceeding by 9200 barrels current requirements as computed by the Bureau of Mines.

Average daily production of bituminous coal during the week ended Feb. 8 was 1,667,000 tons, as compared with 1,692,000 tons in the preceding week and 1,633,000 tons a year ago.

Cotton mill activity was unchanged in the same period, failing to show the usual seasonal advance. The New York *Times* adjusted index dropped to 143.7 per cent of the estimated normal, as against 148.0 for the previous week and 121.0 a year ago.

Professor Fisher's index of wholesale commodity prices for the second week of February stands unchanged at 85.4 per cent of the 1926 average.

Member bank reserve balances increased $29,000,000 during the week ended Feb. 12, and estimated excess reserves increased $20,000,000 to a total of $6,330,000,000. Business loans of the reporting members showed a further expansion of $49,000,000 to stand at $5,173,000,000, or $860,000,000 more than the comparable total last year.

Horst Chrome Process Plant Opens at Olean

The Van der Horst Corp. of America, recently organized by Hendrik van der Horst to introduce in America his patented process of "porous chrome hardening" for cylinder walls, piston rings and bearings, has established its headquarters at Olean, N. Y., where a new plant has been constructed and is in full operation after three months of experimental work.

Mr. Van der Horst began experiments on his present process in 1932, at Hilversum, Holland, where his original plant is in operation. Later he also established British Van der Horst, Ltd., with works at Sheepbridge and Chesterfield, England, and the new plant at Olean is the third to engage in application of this process.

Obtain Diamond Dies To Relieve Shortage

Acting upon recommendation of the OPM, the Defense Supplies Corp. has authorized purchase from the British Purchasing Commission of not more than 6000 small unset diamond dies, which Director of Priorities E. R. Stettinius, Jr., has announced will be given preferential treatment over all non-defense needs.

The dies are available to meet a shortage in the wire drawing industry resulting from the discontinuance of imports from France and Holland due to war conditions. Distribution of the dies will be made by the Defense Supplies Corp. at Washington, with the assistance of the Priorities Division.

Chevrolet Adds Fleetline Body Model to '41 Line

Chevrolet has added another model to its passenger car line—a six-passenger sedan featuring the new Fleetline body by Fisher. Mechanically the new car is identical with the other 1941 Special Deluxe Chevrolets, but the body is of the landau type with four doors and a closed rear quarter. The rear door windows are equipped with ventipanes. Upholstery and interior appointments are new in styling.

Emmons A. Waldron

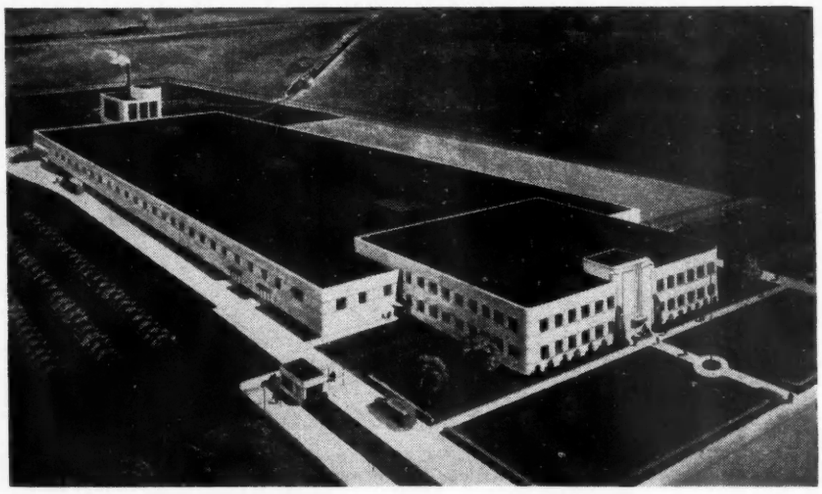
Emmons A. Waldron, head of the Waldron Auto Supply Co., Revere, Mass., died Feb. 14 after a brief illness. He was well-known in the automotive trade throughout New England and was the brother of I. J. Waldron, general sales manager of the Pennsylvania Rubber Co.

40 YEARS AGO

THE "MILLENNIUM"

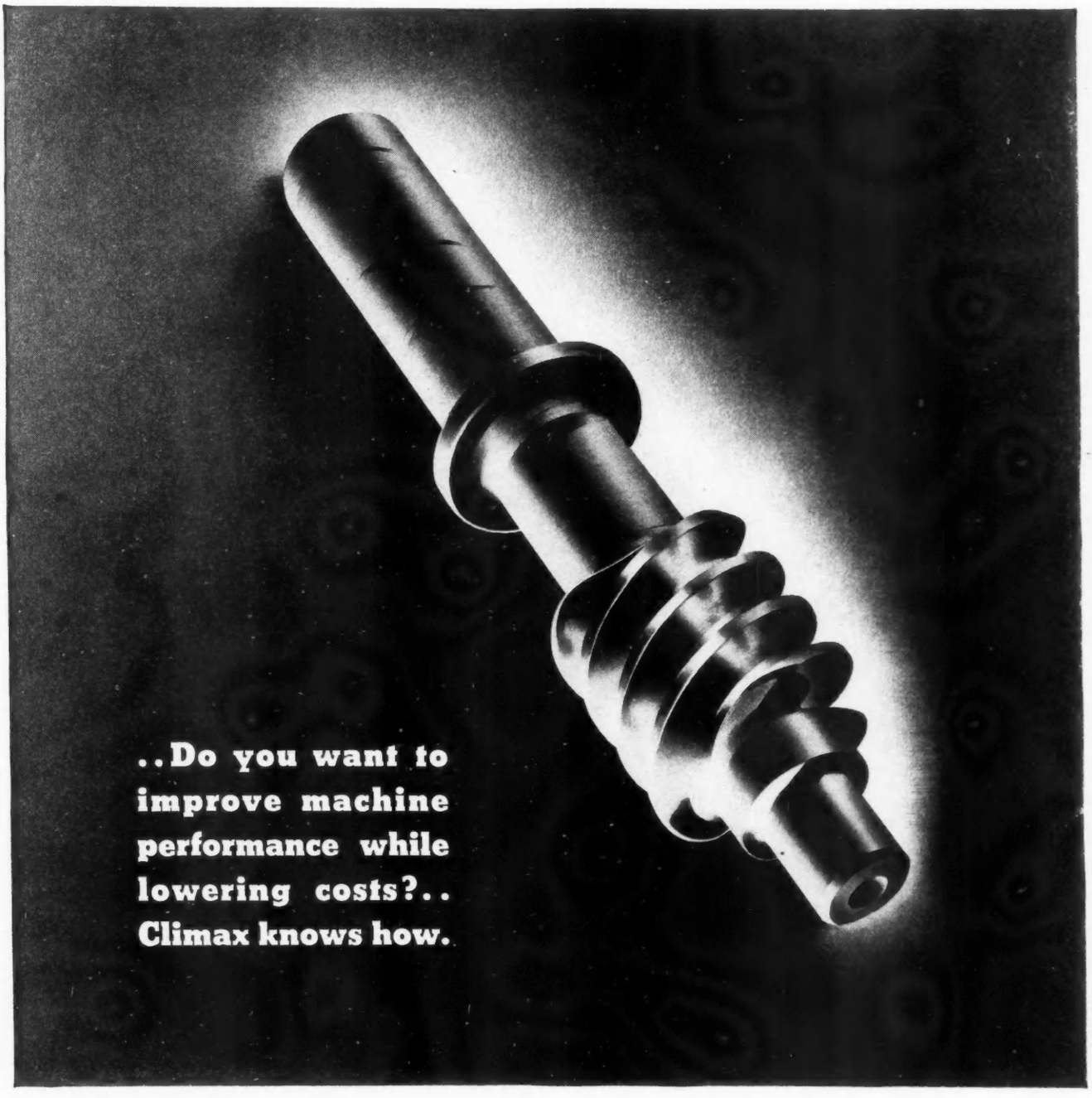
London advices report the invention by two German chemists of a preparation, which, while preserving rubber and keeping it soft and pliable under the severest frost, automatically closes all punctures, however large, in pneumatic tires. A London company formed to exploit the new discovery is said to have sold several thousand tubes treated with the preparation for use on bicycles and automobiles with such satisfactory results that orders for 25,000 tubes have been received. The preparation, known as the "Millennium" will soon be placed on the American market.

From the *Horseless Age*, February, 1901.



Future Bendix-Westinghouse Home

Bendix-Westinghouse Automotive Air Brake Co. plans to open its new factory and general offices at Elyria, Ohio, by May 1. The building will be air, light and heat conditioned throughout. Shown above is the architect's drawing of the structure.



Worm gears for domestic stoker drives call for strength plus wear resistant hardness.

Realizing that neither failures nor noisy gears build good will a forward-looking manufacturer now casts such gears from a Chromium-Molybdenum (0.50% Mo) iron. A 40-50 Rockwell "C" hardness and high strength, after heat treating, meet all requirements and have materially improved performance while reducing costs.

A copy of our technical book, "Molybdenum in Cast Iron" will gladly be sent without charge to interested Production Executives.

CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.
MOLYBDIC OXIDE BRIQUETTES FOR THE CUPOLA—FERROMOLYBDENUM FOR THE LADLE

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MOLY

DEFENSE CONTRACTS

of Automotive Manufacturers and Suppliers

DEFENSE contracts awarded to the automotive industry and its suppliers amounted to three-and-one-half billion dollars from July 1, 1940, to Jan. 15, 1941.

These data are based on releases from the Office of Government Reports and are applicable to definite signed contracts issued by the Army, Navy, Ordnance and those from the Office of Production Management.

The names of the companies comprising the automotive industry and its suppliers were acquired from the records of the *Chilton Automotive Buyers Guide.* A complete alphabetical listing of these companies with what they are manufacturing and the value of their contracts up to Jan. 15, 1941, follows:

ACE RUBBER CO., Akron, Ohio; valves ..... $ 8,995

ACKLIN STAMPING CO., Toledo, Ohio; ammunition parts 3,723

ACME MACHINE TOOL CO., Cincinnati, Ohio; lathes 138,300

AHLBERG BEARING CO., Chicago, Ill.; bearings 1,548

AIRTHERM MFG. CO., St. Louis, Mo.; stoves 52,640

AJAX ELECTRIC CO., INC., Philadelphia, Pa.; furnaces.. 21,900

AJAX ELECTROTHERMIC CORP., Trenton, N. J.; furnaces 40,364

AJAX MFG. CO., Cleveland, Ohio; machines 38,368

ALBERTSON CO., Sioux City, Iowa; tools 36,411

ALLEGHENY FORGING CO., Pittsburgh, Pa.; forgings ... 22,580

ALLEGHENY LUDLUM STEEL CORP., Pittsburgh, Pa.; steel 601,025

ALLIS CHALMERS MFG. CO., Milwaukee, Wis.; tractors, engine parts, misc. equip.... 2,789,903

ALLITH PROUTY, INC., Danville, Ill.; tool parts 5,192

ALL STEEL EQUIPMENT CO., Aurora, Ill.; metal lockers.. 92,879

ALUMINUM CO. OF AMERICA, Pittsburgh, Pa.; aluminum and aluminum parts 724,621

ALUMINUM GOODS MFG. CO., Manitowoc, Wis.; aluminum utensils 511,058

AMERICAN AIR FILTER CO., Louisville, Ky.; filter systems 1,992

AMERICAN BANTAM CAR CO., Butler, Pa.; trucks 1,715,236

AMERICAN BLOWER CO., Detroit, Mich.; heater 1,338

AMERICAN BRAKE SHOE & FOUNDRY CO.

AMERICAN FORGE DIV., Chicago, Ill.; ammunition components 1,094,860

KELLOGG DIV., Rochester, N. Y.; jigs 11,806

AMERICAN BRASS COMPANY, Waterbury, Conn.; brass, tubing, ammunition and parts 4,753,181

AMERICAN BROACH & MACHINE CO., Ann Arbor, Mich.; machines 4,288

AMERICAN CAN CO., New York, N. Y.; bases for grates 50,750

AMERICAN CAR & FOUNDRY CO., New York, N. Y.; tanks and misc. equipment 69,369,832

J. G. BRILL CO., Philadelphia, Pa.; artillery ammunition .. 229,034

AMERICAN CHAIN & CABLE CO.

A. C. CAMPBELL DIV., Bridgeport, Conn.; small arms ammunition 78,350

AMERICAN CHAIN DIV., Bridgeport, Conn.; rings, shackles & tents 16,238

AMERICAN CABLE DIV., Wilkes-Barre, Pa.; misc. cables 404,325

HAZARD WIRE ROPE DIV., Wilkes-Barre, Pa.; wire rope 34,202

AMERICAN CORD & WEBBING CO., New York, N. Y.; cotton webbing 52,660

AMERICAN CYANAMID & CHEMICAL CO., New York; chemicals 82,491

CALCO CHEMICAL DIV., Bound Brook, N. J.; ammunition components 23,000

AMERICAN ELECTRICAL HEATER CO., Detroit, Mich.; soldering irons 11,000

AMERICAN FOUNDRY EQUIPMENT CO., Mishawaka, Ind.; blasting equipment ... 7,197

AMERICAN HARD RUBBER CO., New York, N. Y.; tanks, rubber 2,400

AMERICAN HOIST & DERRICK CO., St. Paul, Minn.; hoisting equipment 29,570

AMERICAN LOCOMOTIVE CO., New York, N. Y.; tanks ... 32,070,000

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DON'T OVERLOOK THIS VERY IMPORTANT FACTOR!

BETTER GRINDING with CODOL

1. Reduced wheel loading and glazing
2. Transparency for closer work
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6. Rust preventative
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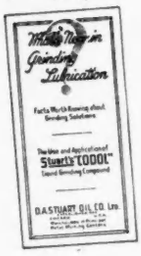
Stuart's CODOL Liquid Grinding Compound

100% grinding efficiency is best accomplished by careful consideration of the grinding fluid factor. The vital part which a properly applied, specialized grinding lubricant plays is too often overlooked. It can mean unnecessary sacrifice in quality of finish, production speed, and cost of wheels.

These handicaps can frequently be eliminated by going over your grinding problems with a STUART OIL Engineer. His highly specialized experience in the application of modern grinding fluids will help you secure top efficiency.

ASK FOR this informative booklet. Free working sample upon request. Please send your name on Company Letterhead.



Be sure to visit the Stuart Oil Exhibit — Booth 174, at the 1941 Machine Tool Progress Exhibition, Detroit, March 24-29.

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Designed FOR SPEED

Built to match the performance and beauty of the 1941 automobiles, the new U. S. Royal De Luxe is the most popular original equipment tire in the industry. The whole tire from the top of the tread to the last ply has been designed for speed. The free-rolling ribs, the Tempered Rubber tread, the Safety Bonded cords, the balanced construction all combine to make the new U. S. Royal De Luxe free-rolling, easier riding, more quiet and stable without any sacrifice in quick stopping or long mileage.

The New 1941
U. S. ROYAL
De Luxe

TIRE DIVISION
United States Rubber Company
6600 EAST JEFFERSON AVE., DETROIT, MICHIGAN

DEFENSE CONTRACTS

AMERICAN MONORAIL CO., Cleveland, Ohio; monorail truck section 1,069
AMERICAN ENGINEERING CO., Philadelphia, Pa.; windlass, anchor & capstan 517,200
AMERICAN NUT AND BOLT FASTENER CO., Pittsburgh, Pa.; washers 2,222
AMERICAN ROLLING MILLS CO., Middletown, Ohio; steel 93,100
AMERICAN SEATING CO., Grand Rapids, Mich.; metal folding chairs 1,108,792
AMERICAN SMELTING & REFINING CO., New York, N. Y.; copper, lead & zinc.. 180,100
FEDERATED METAL DIV.: ammunition components ... 201,618
AMERICAN STEEL FOUNDRIES, Chicago, Ill.; block pins 26,280
AMERICAN TOOL WORKS CO., Cincinnati, Ohio; engine lathes & drills 542,568
AMERICAN TUBE BENDING CO., INC., New Haven, Conn.; radial engine parts .. 23,171
AMERICAN WOOLEN CO., New York, N. Y.; cloth..... 15,510
AMERICAN SCALE CO., Kansas City, Mo.; vises 12,713
AMPCO METAL, INC., Milwaukee, Wis.; small arms materiel 2,291
AMPCO TWIST DRILL CO., Philadelphia, Pa.; reamers.. 1,150

THESE "Suicide Springs" for ammunitions are called on to do their *vital* job but once—and *that job blows them to "smithereens!"*

For their lifetime of one single spring action, they're built to the same fine tolerances—with the same care, precision and accuracy that goes into all Accurate Springs.

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STAMPINGS

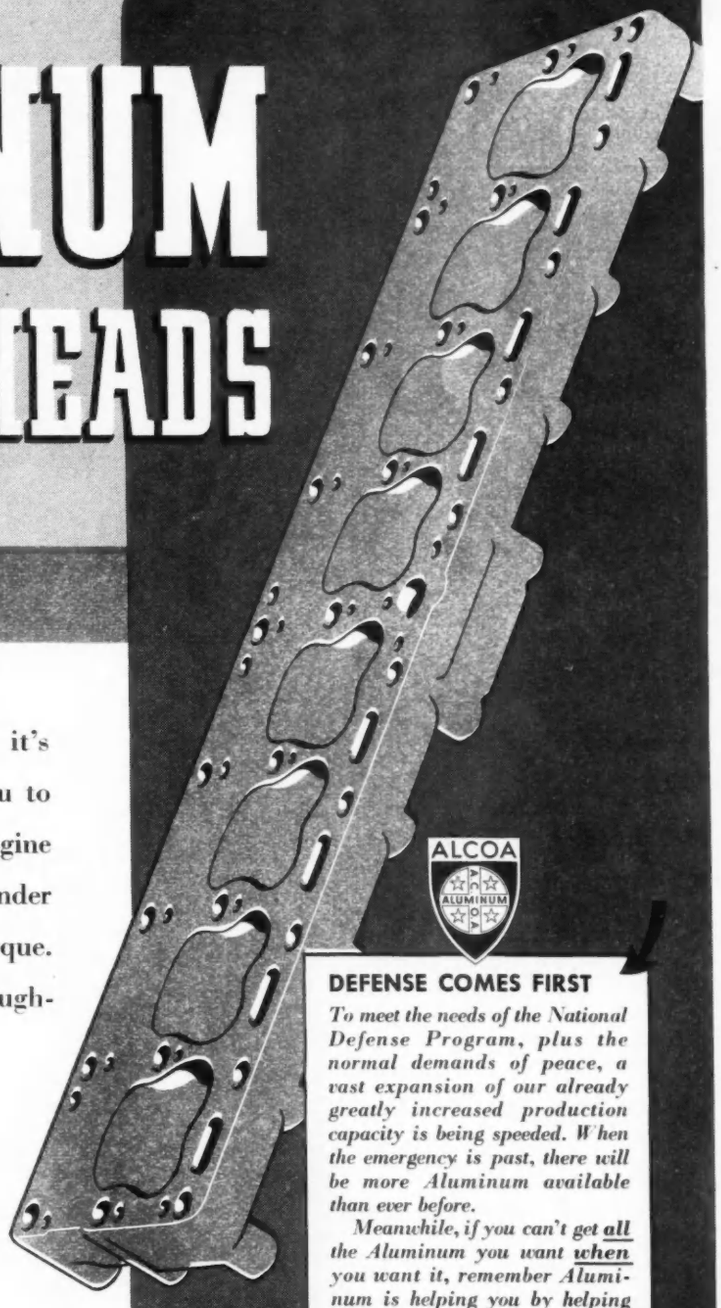
ACCURATE SPRING MFG. CO. 3811 West Lake St. Chicago, Illinois

ANACONDA WIRE & CABLE CO., New York, N. Y.; electric cable 2,452,757
ANTHONY COMPANY, Streator, Ill.; platforms 27,957
AQUA SYSTEMS, INC., gasoline fueling systems 1,745,097
ARMSTRONG BLUM MFG. CO., Chicago, Ill.; tools 21,680
ARMSTRONG CORK CO., Lancaster, Pa.; ammunition components & misc. equipment 1,657,055
ARO EQUIPMENT CORP., Bryan, Ohio; valve equipment 209,197
ARQUTO OILLESS BEARING CO., Philadelphia, Pa.; tools 16,085
ARROW TOOL & REAMER CO., Detroit, Mich.; cutting tools 3,306
ARTER GRINDING MACHINE CO., Worcester, Mass.; grinding machines 21,691
ATHOL MFG. CO., Athol, Mass.; pyroxylincoated cloth 11,586
ATLANTIC METAL HOSE CO., New York, N. Y.; bronze stead hose 16,575
ATLAS IMPERIAL DIESEL ENGINE CO., Oakland, Calif.; generator unit 9,824
ATLAS TACK CORP., Fairhaven, Mass.; trunk locker parts 5,451
ATWATER MFG. CO., Plantsville, Conn.; ammunition components 24,526
ASSOCIATED SPRINGS CORP. WALLACE BARNES DIV., Bristol, Conn.; springs and steel 127,625
AUTOCAR COMPANY, Ardmore, Pa.; trucks, scout cars 19,860,362
AUTO SPECIALTIES MFG. CO., St. Joseph, Mich.; ammunition components 1,653,750
AVIATION MFG. CORP. LYCOMING DIV., Williamsport, Pa.; airplane & engine parts 11,931,252
AXELSON MFG. CO., Los Angeles, Calif.; engine lathes.. 355,021
BABCOCK & WILCOX TUBE CO., Beaver Falls, Pa.; steel tubing 47,260
BAIRD MACHINE CO., Bridgeport, Conn.; machinery 7,787
BAKER-RAULANG CO., Cleveland, Ohio; crane trucks ... 22,197
BALTIMORE PAINT & COLOR WORKS, INC., paint 133,360
BALDWIN LOCOMOTIVE WORKS, Eddystone, Pa.; Tanks & misc. equipment... 36,738,845
BARBER COLMAN CO., Rockford, Ill.; cutters & misc. tools 25,483
BARCALO MFG. CO., Buffalo, N. Y.; steel folding cots ... 250,205
BARDONS AND OLIVER, INC., Cleveland, Ohio; turret lathe 6,266
BARKER TOOL DIE & GAUGE CO., Detroit, Mich.; gages .. 31,539
BARNHARDT MFG. CO., Charlotte, N. C.; surgical dressings 11,858
W. F. & JOHN BARNES, Rockford, Ill.; tools 44,045
LEON J. BARRETT CO., Worcester, Mass.; oil extractors 1,307
JOHN BATH & CO., INC., Worcester, Mass.; gages 20,531
BAUSCH & LOMB OPTICAL CO., Rochester, N. Y.; misc. lens equipment 3,311,775
BAUSCH MACHINE TOOL CO., Springfield, Mass.; reaming machines 9,755
BEALS & SELKIRK TRUNK CO., Wyandotte, Mich.; trunks, lockers 77,325
BEARINGS COMPANY OF AMERICA, Lancaster, Pa.; ball bearings 3,534

When you're talking "Torque,"

think of

ALUMINUM CYLINDER HEADS



High torque means plenty of pull when it's needed most, on the getaway. It enables you to accelerate smoothly and swiftly, with the engine making easy work of it. Aluminum Cylinder Heads help engines develop this high torque.

Aluminum distributes heat rapidly throughout its mass; there are no hot spots in Aluminum Cylinder Heads. You get pingless power. And with this increased power, your operating costs are 5% to 15% lower.

DEFENSE COMES FIRST

To meet the needs of the National Defense Program, plus the normal demands of peace, a vast expansion of our already greatly increased production capacity is being speeded. When the emergency is past, there will be more Aluminum available than ever before.

Meanwhile, if you can't get ***all*** *the Aluminum you want* ***when*** *you want it, remember Aluminum is helping you by helping to meet the National emergency.*

Aluminum Company of America, 2110 Gulf Bldg., Pittsburgh, Pa.

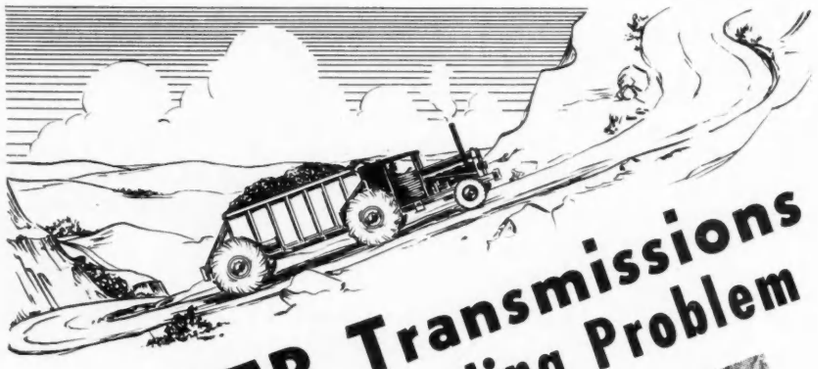
* REG. U. S. PAT. OFF., ALUMINUM COMPANY OF AMERICA

A PRODUCT OF

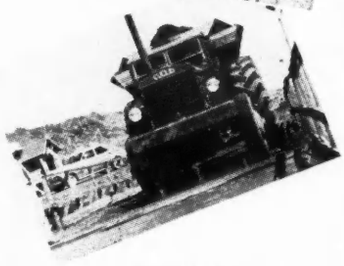
ALCOA · ALUMINUM

DEFENSE CONTRACTS

BEECH AIRCRAFT CORP., Wichita, Kan.; Airplanes & spare parts 22,992,610
BEHR MANNING CORP., Troy, N. Y.; paper, garnet 10,692
BELL AIRCRAFT CORP., Buffalo, N. Y.; airplanes & spare parts 25,824,379
BELVIDERE SCREW CO., Belvidere, Ill.; ammunition parts 1,412
BENDER BODY CO., Cleveland, Ohio; mess equipment 119,112
BENDIX AVIATION CORP., South Bend, Ind.; ammunition components 10,140,000
ECLIPSE MACHINE DIV., Elmira Heights, N. Y.; ammunition & misc. equip..... 22,389,679
BENDIX PARTS DIV., South Bend, Ind.: wheel assemblies 295,761
BENDIX PRODUCTS DIV., South Bend, Ind.; wheel & brake assemblies 13,480,472
PIONEER INSTRUMENT DIV., Bendix, N. J.; misc. instruments 14,421,405
BENDIX RADIO CORPORATION, Baltimore, Md.; radio instruments 7,243,946
SCINTILLA MAGNETO DIV., Sidney, N. Y.; magnetos & misc. parts 37,461
PECO MFG. CO., Philadelphia, Pa.; ammunition components 1,389,365
BENDIX MARINE DIV., Brooklyn, N. Y.; marine instruments 277,192



FULLER Transmissions Solved This Hauling Problem



Loaded, this Euclid Ore Hauler weighs over 116,000 lb. and operates on 8 to 10% grades in the Minnesota iron mines. In this tough service, the FULLER Model 8B860 Transmission with Hydraulic Coupling supplies the required durability and ease of operation, coupled with a wide range of closely spaced gear ratios.

For "more payload per dollar," it pays to specify FULLER'S.

FULLER MFG. CO.
Kalamazoo, Michigan

Fuller

FULLER 8-Speed Transmissions

Four series, eight models, each providing 8 speeds forward and 2 reverse. Choice of overdrive or direct in high.

OTTO BERNZ CO., INC., Rochester, N. Y.; gasoline torches 6,205
BERTSCH & CO., INC., Cambridge City, Ind.; rolling machines 100,148
BETHLEHEM STEEL CO., Bethlehem, Pa.; steel (shipbuilding not included)..... 13,234,182
B. G. CORPORATION, New York, N. Y.; automotive equipment 29,551
BIEDERMAN MOTORS CORP., Cincinnati, Ohio; truck tractors 218,842
BILLINGS AND SPENCER CO., Hartford, Conn.; clamps ... 17,866
BIRTMAN ELECTRIC CO., Rock Island, Ill.; vises 9,320
BISHOP WIRE & CABLE CORP., New York, N. Y.; cable 49,581
BLACKHAWK MFG. CO., Milwaukee, Wis.; jack assemblies 178,815
G. S. BLAKESLEE & CO., Chicago, Ill.; machines 48,439
BLAW KNOX CO., Pittsburgh, Pa.; castings 1,276,032
E. W. BLISS CO., Brooklyn, N. Y.; presses, machines.... 185,655
BLOOD BROS. MACHINE CO., Allegan, Mich.; universal steel joints 1,411
J. G. BLOUNT CO., Everett, Mass.; lathes 15,851
BODINE CORP., Bridgeport, Conn.; machines 6,875
BOEING AIRPLANE CO., Seattle, Wash.; bombing planes & spare parts 130,274,494
STEARMAN AIRCRAFT DIV., Wichita, Kan.; airplanes ... 9,281,299
BOHN ALUMINUM & BRASS CO., Detroit, Mich.; ammunition components 773,247
BORG WARNER CORPORATION
INGERSOLL STEEL & DISC DIV., Chicago, Ill.; artillery ammunition 7,614,630
MARVEL SCHEBLER CARBURETOR DIV., Flint, Mich.; track controls 238,242
ROCKFORD DRILLING MACHINE DIV., Rockford, Ill.; misc. engine parts 19,712
BOSTON INSULATED WIRE & CABLE CO., Dorchester, Mass.; electric cable..... 17,316
BOSTON WOVEN HOSE & RUBBER CO., Boston, Mass.; hose & misc. equipment..... 145,063
BOWEN PRODUCTS CORP., Ecorse, Mich.; soldering equipment 20,782
BOYLE MFG. CO., Los Angeles, Calif.; steel drums 81,132
BOYERTOWN AUTO BODY WORKS, INC., Boyertown, Pa.; trailers and bodies..... 21,532
BRADFORD MACHINE TOOL CO., Cincinnati, Ohio; lathes 241,735
BRAEBURN ALLOY STEEL CORP., Braeburn, Pa.; tool steel 1,132
BREEZE CORP., INC., Newark, N. J.; automotive equipment 1,007,041
BREWSTER AERONAUTICAL CORP., L. I. City, N. Y.; airplanes 15,177,812
BRIDGEPORT BRASS CO., Bridgeport, Conn.; brass & ammunition 3,147,597
BRIDGEPORT THERMOSTAT CO., INC., Bridgeport, Conn.; ammunition 478,871
BRIGGS & STRATTON CORP., Milwaukee, Wis.; ammunition components 2,520,910
BRODERICK AND BASCOM ROPE CO., St. Louis, Md.; nautical equipment 177,243
BROWN & SHARPE MFG. CO., Providence, R. I.; machines 1,330,434

Warner

ELECTRIC BRAKES

DESIGNED EXPRESSLY FOR TRAILING EQUIPMENT

For
Complete Information
Write

WARNER ELECTRIC BRAKE MFG. CO.
BELOIT, WISCONSIN

DEFENSE CONTRACTS

BROWN INSTRUMENT CO., Philadelphia, Pa.; misc. instruments 22,671
CHARLES BRUNING CO., INC., Chicago, Ill.; photography instruments 315,799
BRYANT MACHINERY & ENGINEERING CO., Chicago, Ill.; machines 28,203
THE BUDA CO., Harvey, Ill.; engines & machines..... 2,971,895
GUIBERSON DIESEL ENGINE DIV., Chicago, Ill.; Diesel engines and parts.... 4,264,904
EDWARD G. BUDD MFG. CO., Philadelphia, Pa.; machinery & ammunition 4,427,873
BUDD WHEEL CO., Detroit, Mich.; ammunition components 14,549,976
ELIAS BUEGELEISEN, Brooklyn, N. Y.; lens equipment.. 3,800
BUFFALO BOLT CO., North Tonawanda, N. Y.; ammunition components 28,625
BUFFALO FORGE CO., Buffalo, N. Y.; bending roll 15,285
BUHL STAMPING CO., Detroit, Mich.; milk cans..... 53,600
BUILDERS IRON FOUNDRY, Providence, R. I.; lathes.... 62,000
BULLARD CO., Bridgeport, Conn.; lathes 755,986
BURGESS NORTON MFG. CO., Geneva, Ill.; bodies block.... 27,632
BURKE ELECTRIC CO., Erie, Pa.; generators..... 81,940
BUSS MACHINE WORKS, Holland, Mich.; surfacers..... 7,488
W. E. CALDWELL CO., Louisville, Ky.; rifle range equipment 34,000
CAMBRIDGE INSTRUMENT CO., New York, N. Y.; indicator assemblies..... 198,480
CAMPBELL WYANT & CANNON FOUNDRY CO., Muskegon Heights, Mich.; ammunition parts 98,880
CANDLER HILL CORP., Detroit, Mich.; automotive equipment 145,712
CARBIDE & CARBON CHEMICALS CORP.; New York, N. Y.; chemicals..... 262,117
CARBOLOY CO., INC., Detroit, Mich.; tools & ammunition.. 9,751
THE CARBORUNDUM CO., Niagara Falls, N. Y.; sharpening stones 12,966
CARNEGIE ILLINOIS STEEL CORP., Pittsburgh, Pa.; steel 7,029,449
CARPENTER STEEL CO., Reading, Pa.; tool steel..... 212,147
CARLTON MACHINE TOOL CO., Cincinnati, Ohio; drills 132,712
CARTER CARBURETOR CORP., St. Louis, Mo.; ammunition components 1,335,536
J. I. CASE CO., Racine, Wis.; ammunition components ... 4,634,500
CATERPILLAR TRACTOR CO., Peoria, Ill.; tractors 619,633
CELLULOID CORP., New York, N. Y.; plastic sheets..... 1,721
CENTURY BOAT CO., Manistee, Mich.; boats 98,800
CESSNA AIRCRAFT CO., Wichita, Kans.; training planes.. 900,378
CHAMBERSBURG ENGINEERING CO., Chambersburg, Pa.; hammers 72,742
CHAMPION SPARK PLUG CO., Toledo, Ohio; spark plugs.. 128,677
CHASE BRASS & COPPER CO., Waterbury, Conn.; brass & ammunition parts 6,582,374
CHICAGO CORK WORKS CO., Chicago, Ill.; ammunition components 2,500
CHICAGO MALLEABLE CASTINGS CO., Chicago, Ill.; iron castings 1,163
CHICAGO PNEUMATIC TOOL CO., New York, N. Y.; electrical equipment 310,956
CHICAGO RAWHIDE MFG. CO., Chicago, Ill.; small arms material 1,095
CHISHOLM MOORE HOIST CORP., Tonawanda, N. Y.; chain hoists..... 30,869
CHRIS CRAFT CORP., Algonac, Mich.; boats 37,944
CHRYSLER CORP., Detroit, Mich.; tanks 33,500,000
CINCINNATI BALLCRANK CO., Cincinnati, O.; ammunition components 204,068
CINCINNATI BICKFORD TOOL CO., Cincinnati, O.; drilling machines 39,218
CINCINNATI ELECTRIC TOOL CO., Cincinnati, O.; buffers, polishers & grinders..... 151,488
CINCINNATI MILLING MACHINE & CINCINNATI GRINDERS, INC., Cincinnati, Ohio; machines, metal working 1,821,358
CINCINNATI SHAPER CO., Cincinnati, Ohio; machines, metal working 75,118
CINCINNATI TOOL CO., Cincinnati, Ohio; pontoon equipment 103,546
E. D. CLAPP MFG. CO., Auburn, N. Y.,; drop forgings..... 1,586
CLARAGE FAN CO., Kalamazoo, Mich.; unit heaters 2,310
CLARK EQUIPMENT COMPANY, Battle Creek, Mich.; trucks, tractors 1,356,315

• • • *Unequalled* SURFACE SMOOTHNESS and SPHERICITY

The series of lapping operations performed as a matter of course in the Strom plant give Strom Steel Balls a degree of surface smoothness and sphericity that has always been unequalled in any other regular grade of ball. Only through such unique lapping practice can extreme precision be obtained.

Physical soundness, correct hardness, size accuracy, and sphericity are guaranteed unconditionally in all Strom Balls.

Other types of balls—*stainless steel, monel, brass* and *bronze*—are also available in all standard sizes. Write for catalog and prices.

Strom STEEL BALL CO.
1850 So. 54th Avenue, Cicero, Ill.
The largest independent and exclusive Metal Ball Manufacturer

DEFENSE CONTRACTS

CLEARING MACHINE CORPORATION, Chicago, Ill.; press brake 41,900
CLEMSON BROS., INC., Middletown, N. Y.; hacksaw blades 5,505
CLEVELAND AUTOMATIC MACHINE CO., Cleveland, O.; machines, metal working 42,000
THE CLEVELAND CONTAINER CO., Cleveland, O.; ammunition 25,543
CLEVELAND CRANE & ENGINEERING CO.; cranes..... 7,140
CLEVELAND PNEUMATIC TOOL CO., Cleveland, O.; air hose couplings 18,887
CLEVELAND TRACTOR CO., Cleveland, O.; light tractors 300,058
CLEVELAND TWIST DRILL CO., Cleveland, O.; tools.... 3,593
THE CLEVELAND UNIVERSAL JIG CO., Cleveland, O.; machinery 1,646
CLEVELAND WELDING CO., Cleveland, O.; ammunition components 449,820
CLEVELAND WIRE SPRING CO., Cleveland, O.; field range parts 3,600
CLIMAX ENGINEERING CO., Clinton, Iowa; engines 124,451
CLOVER MFG. CO., Norwalk, Conn.; abrasive cloth..... 26,536
CLYDE IRON WORKS CO., Duluth, Minn.; winches..... 73,890
COLUMBIAN STEEL TANK CO., Kansas City, Mo.; steel buildings 47,280
COLUMBUS BOLT WORKS CO., Columbus, O.; wedges..... 32,480
COLSON CORP., Elyria, O.; stand assemblies 36,270
COLT'S PATENT FIRE ARMS MFG. CO., Hartford, Conn.; small arms ammunition 18,715,818
COMTOR CO., Waltham, Mass.; gages 5,088
CONE AUTOMATIC MACHINE CO., Windsor, Vt.; machines 28,532
CONNECTICUT TELEPHONE & ELECTRIC CO., Meriden, Conn.; telephone equipment 474,860
CONSOLIDATED AIRCRAFT CORP., San Diego, Calif.; airplanes 192,335,871
CONSOLIDATED INSTRUMENT CORP., Michigan City; Ind.; speed indicator sets 10,074
CONSOLIDATED MACHINE TOOL CORP., Rochester, N. Y.; engine lathes 1,054,770
CONTINENTAL MACHINES, INC., Minneapolis, Minn.; machines 46,889
CONTINENTAL MOTORS CORP., Muskegon, Mich.; engines & parts 27,444,287
CONTINENTAL RUBBER CO., Erie, Pa.; rubber deflectors. 23,832
COOK ELECTRIC CO., Chicago, Ill.; switchboards 89,228
COPPERWELD STEEL CO., Glassport, Pa.; steel 260,500
CORBIN SCREW CORP., New Britain, Conn.; ammunition components 114,495
CORBITT CO., Henderson, S. C.; trucks 2,985,691
C. COWLES & CO., New Haven, Conn.; artillery material ... 4,927
ARTHUR A. CRAFTS CO., INC., Boston, Mass.; gages.. 4,880
CRAWFORD AUSTIN MFG. CO., Waco, Texas; hammocks & cots 2,571,142
CRAWFORD MFG. CO., Richmond, Va.; mattress covers. 75,380
CRESCENT TRUCK CO., Lebanon, Pa.; electric trucks .. 27,077
CROSBY CO., Buffalo, N. Y.; ammunition components ... 1,211,024
CRUCIBLE STEEL CO. OF AMERICA, New York, N. Y.; steel & ordnance material... 7,884,083
CULLEN FRIESTEDT CO., Chicago, Ill.; welding equipment 6,586
JAMES CUNNINGHAM SON & CO., Rochester, N. Y.; carriage assemblies 215,180
CURTISS WRIGHT CORP., New York, N. Y.
CURTISS AEROPLANE DIV., Buffalo, N. Y.; airplanes & parts 158,838,750
CURTISS PROPELLER DIV., Clifton, N. J.; propellers & parts 64,540,339
ST. LOUIS AIRPLANE DIV., Robertson, Mo.; airplanes ... 3,674,566
WRIGHT AERONAUTICAL CORP., New York, N. Y.; engines & parts 318,542,198
CUSHMAN MOTOR WORKS, Lincoln, Nebr.; ammunition components 582,600
CUYAHOGA SPRING CO., Cleveland, Ohio; misc. equipment 12,170
CYCLONE FENCE CO., Waukegan, Ill.; fencing 10,174
DART TRUCK CO., Kansas City, Mo.; tank body trucks 28,900
DARWIN & MILNER, INC., Cleveland, Ohio; cutters ... 2,500
DAVENPORT BESSLER CORP., Davenport, Iowa; flanges... 62,266
DAVIS BORING TOOL DIV., LARKIN PACKER CO., St. Louis, Mo.; tools 1,373

ONLY LAPPING *As Strom Does It* CAN PRODUCE SUCH PRECISION

Strom Steel Balls possess a degree of surface smoothness and sphericity that has never been equalled in any other regular grade of ball. Such precision is exclusive with Strom because it can be attained only through a series of lapping operations such as are standard practice in the Strom plant.

Physical soundness, correct hardness, size accuracy and sphericity are guaranteed in all Strom Balls.

Other types of balls—*stainless steel, monel, brass* and *bronze*, are also available in all standard sizes. Write for complete details.

Strom STEEL BALL CO.
1850 So. 54th Avenue, Cicero, Ill.
The largest independent and exclusive Metal Ball Manufacturer

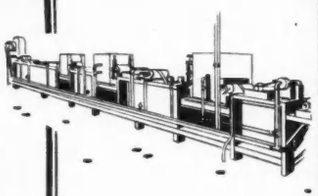
DEFENSE CONTRACTS

DELTA ELECTRIC CO., Marion, Ind.; electric lanterns 15,302
DENISON ENGINEERING CO., Columbus, Ohio; hydraulic machines 151,752
GARDNER DENVER CO., Quincy, Ill.; compressors ... 72,229
DE WALT PRODUCTS CORP., Lancaster, Pa.; machines .. 14,335
DIAMOND T MOTOR CAR CO., Chicago, Ill.; trucks 28,691,343
DIAMANT TOOL & MACHINE MFG. CO., Newark, N. J.; tools 4,169
HENRY DISSTON & SONS, INC., Philadelphia, Pa.; Armor plate & files 135,642
DOEHLER DIE CASTING CO., New York, N. Y.; ammunition & dies 553,876
DOLLIN CORP., Irvington, N. J., ammunition components ... 50,154
DORSEY BROTHERS, Elba, Ala.; semi-trailers 41,312
DOVER STAMPING & MFG. CO., Cambridge, Mass.; accessories for field ranges ... 15,682
DOW CHEMICAL CO., Midland, Mich.; ammunition & chemicals 51,450
GREAT WESTERN DIV., San Francisco, Calif.; chemical.. 7,020
DOUGLAS AIRCRAFT CO., INC., Santa Monica, Calif.; airplanes & parts 219,926,294

Electro Coated Thomastrip Meets New Applications

THOMAS has centered its attention on developing cold rolled strip steel to its most advanced state. The complications of painstaking processes are considered insignificant when higher quality is the reward.

Gauges to eliminate guesswork, fingertip controls to maintain precision, as well as other methods for more exacting command over production have led to quality improvements in Thomas electro coatings. Hence, we offer to manufacturers who use electro coated Thomastrip new opportunities for reducing costs and improving products.



Thomas Strip
COLD ROLLED STRIP STEEL

Always Laboratory Approved

Bright Finish Uncoated or Electro Coated With Nickel, Zinc, Copper, Brass

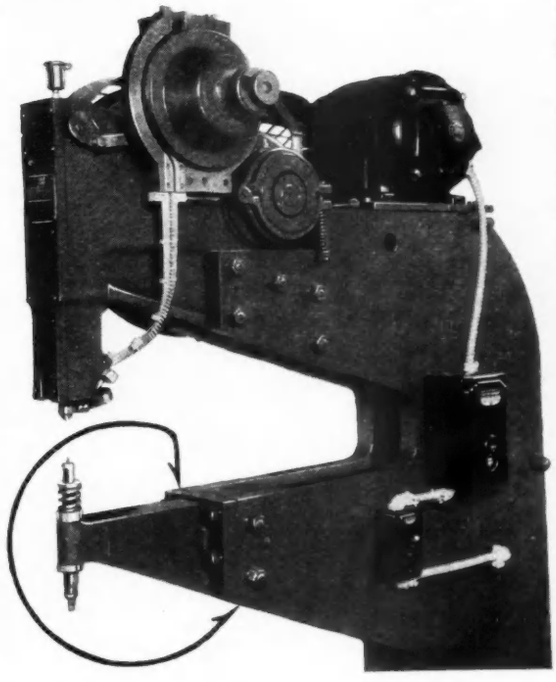
THE THOMAS STEEL CO.
SPECIALIZED PRODUCERS OF COLD ROLLED STRIP STEEL
WARREN, OHIO

DRAVO CORP., Pittsburgh, Pa.; open lighters 408,455
DUPLEX MFG. CORP., Sherman, N. Y.; steel chests ... 26,064
DURO METAL PRODUCTS CO., Chicago, Ill.; artillery materiel 1,210
EAGLE LOCK CO., Terryville, Conn.; locks 5,029
EAGLE PICHER SALES CO., Cincinnati, Ohio; insulation 65,289
EASTERN ROLLING MILL CO., Baltimore, Md.; artillery ammunition components 1,883,000
EASTMAN KODAK CO., Rochester, N. Y.; photographic equipment 13,386,849
THOMAS A. EDISON, INC., West Orange, N. J.; automotive equipment 189,999
EDISON SPLITDORF CORP., W. Orange, N. J.; thermometer bulbs 24,378
EDWARDS MFG. CO., Cincinnati, Ohio; practice bombs.. 53,100
ELECTRIC ARC CUTTING & WELDING CO., Newark, N. J.; welding equipment... 302,870
ELECTRIC AUTO LITE CO., Toledo, Ohio; ammunition components 2,124,283
AMERICAN WIRE DIV., Port Huron, Mich.; magnet wire.. 14,668
PREST O LITE BATTERY CO., INC., Indianapolis, Ind.; aircraft batteries 162,380
ELECTRIC BOAT CO., New York, N. Y.; boats 6,502,008
ELECTRIC MATERIALS CO., Pittsburgh, Pa.; copper hammers 5,018
ELECTRIC PRODUCTS CO., Cleveland, Ohio; electrical supplies 219,826
ELECTRIC STORAGE BATTERY CO., Philadelphia, Pa.; storage batteries 641,703
ELECTRIC WHEEL CO., Quincy, Ill.; trailer parts ... 325,116
EISEMAN MAGNETO CORP., New York, N. Y.; magnetos. 8,500
ELGIN NATIONAL WATCH CO., Elgin, Ill.
AIRCRAFT INSTRUMENT DEPT., Elgin, Ill.; aircraft clocks & watches 287,515
ELGIN SWEEPER CO., Elgin, Ill.; street cleaner 7,190
EMERSON ELECTRIC MFG. CO., St. Louis, Mo.; ammunition components 822,232
ELWELL PARKER ELECTRIC CO., Cleveland, Ohio.; trucks 11,989
CHARLES ENGELHARD, INC., Newark, N. J.; indicator assemblies 180,906
ERDLE PERFORATED CO., Rochester, N. Y.; perforated metal 8,340
ETCHED PRODUCTS CORP., Long Island City, N. Y.; fire control equipment 20,420
EUCLID CRANE & HOIST CO., Euclid, Ohio, cranes 60,190
EVER TITE MFG. CO., Davenport, Iowa; automotive equipment 57,838
EXACT WEIGHT SCALE CO., Columbus, Ohio, scales 15,980
ECLIPSE AIR BRUSH CO., INC., Newark, N. J.; machines 11,278
EX-CELL-O CORP. CONTINENTAL TOOL WORKS DIV., Detroit, Mich.; tools & machines ... 109,619
FAIRBANKS MORSE & CO., Chicago, Ill.; submarines & marine equipment 19,227,449
FAIRCHILD AVIATION CORP., Jamaica, N. Y.; stereoscopes, aircraft cameras 1,134,122
FAIRCHILD ENGINE & AIRPLANE CORP., Hagerstown, Md.; aeronautical engines... 7,983,228

FARREL BIRMINGHAM CO., INC., Buffalo, N. Y.; engine stub & engine couplings, shafts 54,723
FATE ROOT HEATH CO., Plymouth, Ohio; locomotive. 51,502
FEDERAL ELECTRIC CO., INC., Chicago, Ill.; Svien type alarms 78,159
FEDERAL LEATHER CO., Belleville, N. J.; pyroxylin coated cloth 10,889
FEDERAL MACHINE & WELDER CO., Warren, Ohio; electric seam welding machine 6,590
FEDERAL MOTOR TRUCK CO., Detroit, Mich.; truck tractors 4,224,957
FEDERAL PRODUCTS CORP., Providence, R. I.; gages ... 9,575
FEDERAL SCREW WORKS, Detroit, Mich.; artillery ammunition components 11,280,008
FELTERS CO., INC., Boston, Mass.; felt for insignia, wool mackinaw cloth 86,600
FERRACUTE MACHINERY CO., Bridgeton, N. J.; machinery 6,015
A. FINKL & SONS CO., Chicago, Ill.; artillery materiel. 109,850
FIRESTONE TIRE & RUBBER CO., Akron, Ohio; small arms material, gaskets, tires, etc. 4,570,191
FIRTH STERLING STEEL CO., McKeesport, Pa.; tools for small arms 14,474
CHAS. FISHER SPRING CO., Brooklyn, N. Y.; goggle & flying temple assemblies, small arms material 216,754
FITCHBURG GRINDING MACHINE CORP., Fitchburg, Mass.; grinders 3,739
FITZSIMONS CO., Youngstown, Ohio; steel bar 2,453
FOOTE BURT CO., Cleveland, Ohio; machines 62,645
FORD MOTOR COMPANY, Dearborn, Mich.; trucks and aircraft engines 124,507,150
FORT PITT BEDDING CO., Pittsburgh, Pa.; ammunition parts 376,464
FOUNDRY EQUIPMENT CO., Cleveland, Ohio; ovens, core and mold 26,400
FRUEHAUF TRAILER CO., Detroit, Mich.; trailers & dollies 1,747,773
FULTON BAG & COTTON MILLS, Atlanta, Ga.; hammocks & burlap bags 26,850
FULTON SYLPHON CO., Knoxville, Tenn.; artillery ammunition components 209,091
FYR FYTER CO., Dayton, Ohio; Fire extinguishers 43,600
GALLMEYER AND LIVINGSTON CO., Grand Rapids, Mich.; grinders & grinding machines 14,190
GAR WOOD INDUSTRIES, INC., Detroit, Mich.; reel units, artillery materiel & gasoline engines 4,886,015
GATES RUBBER CO., Denver, Colo.; hose, air, diving apparatus 16,647
GENERAL BOX CO., INC., Chicago, Ill.; ammunition components 75,209
GENERAL CABLE CORP., New York City, N. Y.; electric cables 688,838
GENERAL DROP FORGE CO., INC., Buffalo, N. Y.; alloy steel forgings 10,801
GENERAL ELECTRIC CO., Schenectady, N. Y.; main generators, locomotives, turbines, etc. 35,021,636
GENERAL ELECTRIC SUPPLY CO., Schenectady, N. Y.; knife switches, incandescent lamp sockets 36,978
GENERAL ELECTRIC X-RAY CORP., Chicago, Ill.; units, X-ray equipment & surgical supplies & instruments..... 260,437
GENERAL FIREPROOFING CO., Youngstown, Ohio; chairs and office chairs, tables, shelving 580,706
GENERAL MACHINERY CO., Hamilton, Ohio; engine lathes 487,305
GENERAL MOTORS CORP.
AC SPARK PLUG DIV., Flint, Mich.; machine guns 61,398,872
ALLISON ENGINEERING CO., Indianapolis, Ind.; aircraft engines and parts 69,932,580
CHEVROLET DIV., Detroit, Mich.; trucks 14,491,893
DELCO APPLIANCE DIV., Rochester, N. Y.; fire control appliances, anti-aircraft 3,122,309
DELCO PRODUCTS DIV., Dayton, Ohio; ammunition components 963,704
CLEVELAND DIESEL ENGINE DIV., Cleveland, Ohio; machinery for submarines .. 20,497,020
FRIGIDAIRE DIV., Dayton, Ohio; machine guns 62,607,072
GUIDE LAMP DIV., Anderson, Ind.; artillery ammunition components 66,068,635
PACKARD ELECTRIC DIV., Warren, Ohio; ignition cables 2,470
YELLOW TRUCK & COACH MFG. CO., Pontiac, Mich.; trucks 96,747,263

for more solid rivet joints per RIVITOR

(minimized change-over time)



Sustained production with but small loss of time for "change-overs," is possible with this "Interchangeable Horn Type" RIVITOR

Complete horn sections, carrying the anvil mechanism, may be transferred to another Rivitor (this type) which has the required throat depth to get the next rivet locations.

This not only permits maximum machine utilization but also accommodates more automatic feed riveting without having to have additional complete machines. At the same time, the deep throat machines can be kept busy with work requiring that accommodation. Information on these and the other type Rivitors will be sent promptly, address The Tomkins-Johnson Co., 613 N. Mechanic Street, Jackson, Michigan.

THIS IS A TOMKINS-JOHNSON RIVITOR

DEFENSE CONTRACTS

GENERAL TIRE & RUBBER CO., Akron, Ohio; inner tubes, tire, deflectors and Evering machines 320,169
GEOMETRIC TOOL CO., New Haven, Conn.; chasers & taps 2,044
GEUDER, PAESCHKE & FEREY CO., Milwaukee, Wis.; dish pans 25,520
GIBBS GAS ENGINE CO. OF FLORIDA, Jacksonville, Fla.; small boats 719,200
GILBERT & BARKER MFG. CO., Springfield, Mass.; fire control instruments 4,001,637
GISHOLT MACHINE CO., Madison, Wis.; turret lathes and balancing machine 345,426
GLEASON WORKS, Rochester, N. Y.; machines & generators 157,576
GLOBE MACHINE & STAMPING CO., Cleveland, Ohio; ammunition components 414,000
G. M. MANUFACTURING CO., INC., Long Island, N. Y.; ammunition components & oil & fresh water coolers .. 15,530
B. F. GOODRICH CO., Akron, Ohio; miscellaneous automotive equipment 8,831,527
GOODYEAR TIRE & RUBBER CO., Akron, Ohio; miscellaneous automotive equipment 5,910,616
GEORGE GORTON MACHINE CO., Racine, Wis.; engraving machines 16,590
GOULD AND EBERHARDT, Newark, N. J.; machine equipment 81,139
JOHN H. GRAHAM & CO., INC., New York, N. Y.; hacksaw blades 32,536
GRAMM MOTOR TRUCK CORP., Delphos, Ohio; semi-trailers 58,710
GRATON & KNIGHT CO., Worcester, Mass.; fire control equipment 48,778
G. A. GRAY CO., Cincinnati, Ohio; openside planes 98,209
GRAYBAR ELECTRIC CO., INC., New York City, N. Y.; field telephones and equipment 2,710,453
GREAT LAKES STEEL CORP., Detroit, Mich.; steel, sheet.. 5,257
GREENERD ARBOR PRESS CO., Nashua, N. H.; arbor presses 2,192
GREENFIELD TAP & DIE CORP., Greenfield, Mass.; gages 435,685
GREENLEE BROS. & CO., Rockford, Ill.; planers 8,106
GRUMAN AIRCRAFT ENGR. CORP., Bethpage, L. I., N. Y.; airplanes and spare parts 7,954,980
HALL PLANETARY CO., Philadelphia, Pa.; thread miller.. 5,589
HALL SCOTT MOTOR CAR CO., New York, N. Y.; marine gasoline engines 606,788
HAMILTON CASTER & MFG. CO., Hamilton, Ohio; dump trailers 1,825
HAMPDEN BRASS CO., Springfield, Mass.; bronze castings 1,330
HANDY & HARMON, New York, N. Y.; silver solder.. 5,429
HANNIFIN MFG. CO., Chicago, Ill.; combination machines and artillery material 390,505
HANSON CLUTCH & MACHINERY CO., Tiffin, Ohio; power shovels 20,947
HANSON VAN WINKLE MUNNING CO., Matawan, N. J.; motor generator 98,011
HANSON WHITNEY MACHINE CO., Hartford, Conn.; thread nulling machines, tools and gages 137,594
HARDINGE BROTHERS, INC., Elmira, N. Y.; milling machines & lathes 173,168
HARLEY DAVIDSON MOTOR CORP., Milwaukee, Wis.; motorcycles 907,753
HARNISCHFEGER CORP., Milwaukee, Wis.; bridge cranes 733,159
HARRINGTON CO., Philadelphia, Pa.; chain hoists 37,824
HARRINGTON & KING PERFORATING CO., New York, N. Y.; metal, aluminum, perforated tin plates 13,027
HARRISBURG STEEL CORP., Harrisburg, Pa.; cylinders, ammunition and explosives.. 3,418,358
R. G. HASKINS CO., Chicago, Ill.; machines 1,039
C. I. HAYES, INC., Providence, R. I.; furnaces 13,089
HAYES INDUSTRIES, INC., Jackson, Mich.; wheel & brake assemblies, maintenance parts 1,540,598
HEALD MACHINE CO., Worcester, Mass.; grinders 322,409
HEIL COMPANY, Milwaukee, Wis.; trailers and servicing trucks 3,902,994
HELLER BROTHERS CO., Newark, N. J.; hammers ... 8,713
HENDEY MACH. CO., Torrington, Conn.; lathes 149,294

Sheet Metal
BEARINGS
for Economy

● Low in cost . . . high in efficiency . . . long bearing life . . . ample resistance to pounding, shock or impact. These are chief characteristics of Sheet Metal Bearings.

If you can use thin wall sleeve bearings, it will pay you to investigate the possibilities of this type. Johnson can fill your needs with a variety of materials—plain bronze, graphited bronze, steel and babbitt or steel and bronze. There are no limitations to size or quantity. Each and every bearing will be absolutely uniform in size, in thickness and in tolerances.

Why not check the bearing applications in your product—now? Our engineers and metallurgists will gladly assist you in determining your needs—without obligation.

NEW!

Sleeve Bearing Data Sheets for your file folder. Contain a wealth of valuable information for all users of bearings. Write for your FREE copy.

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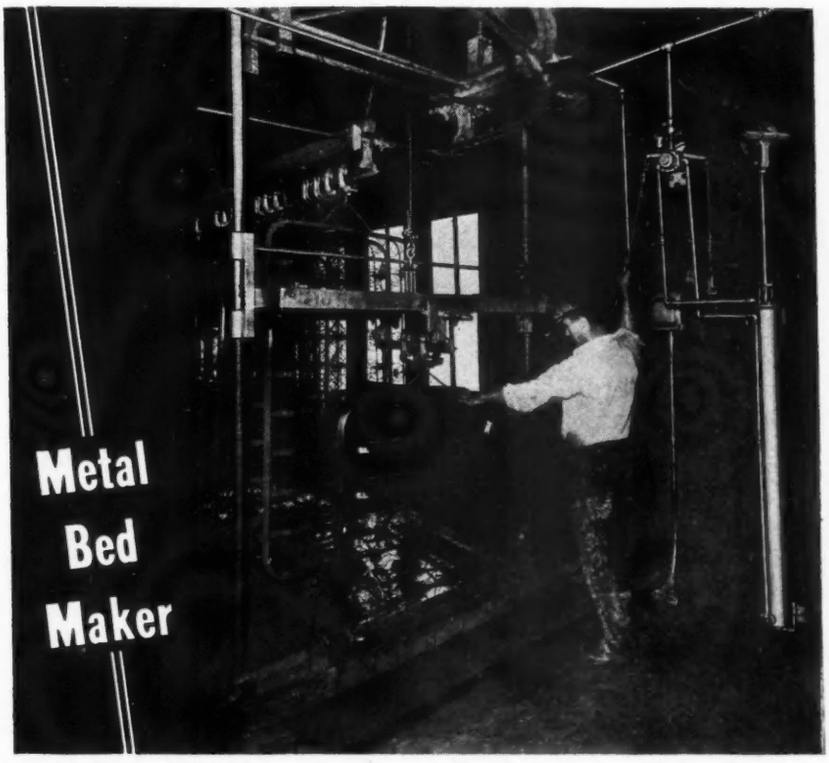
Sleeve BEARING HEADQUARTERS
625 S. MILL STREET · NEW CASTLE, PA.

DEFENSE CONTRACTS

HENNEY MOTOR CO., Freeport, Ill.; gasoline motor ambulances	124,568
HENRY & WRIGHT MFG. CO., Hartford, Conn.; machinery.	34,351
HEPPENSTALL COMPANY, Pittsburgh, Pa.; ordnance material	832,997
HERTNER ELECTRIC CO., Cleveland, Ohio; storage battery charging equipment	5,841
HETTRICKS MFG. CO., Toledo, Ohio; sleeping equipment	258,710
HEVI DUTY ELECTRIC CO., Milwaukee, Wis.; electric furnaces	11,567
HEWITT RUBBER CORP., Buffalo, N. Y.; hoses	31,918
HEYWOOD WAKEFIELD CO., Gardner, Mass.; barrack chairs	35,477
HICKOK ELECTRICAL INSTRUMENT CO., Cleveland, Ohio; aircraft indicators and switches indicators	57,117
HIGH SPEED HAMMER CO., INC., Rochester, Pa.; machines	8,361
HIGHWAY TRAILER CO., Edgerton, Wis.; trailers	45,290
HOBART BROS. CO., Troy, N. Y.; generating units	86,193
CLINTON E. HOBBS CO., Boston, Mass.; chain hoists	21,565
NORMA HOFFMANN BEARINGS CORP.; ball bearings	1,652
HOKE, INC., New York, N. Y.; charging apparatus	4,144
R. M. HOLLINGSHEAD CORP., Camden, N. J.; rust preventive compound and metal liquid polish	179,081
HOLO KROME SCREW CORP., Hartford, Conn.; small arms material	1,215
HOMELITE CORP., Port Chester, N. Y.; electric power plants	660,942
HOOD RUBBER PRODUCTS CO., Watertown, Mass.; arctic overshoes	41,000
WM. E. HOOPER & SONS CO., Phila., Pa.; cotton goods	127,488
HOOVER BALL & BEARING CO., Ann Arbor, Mich.; ball bearings	10,563
HOOVER CO., North Canton, Ohio; artillery ammunition components	3,923,300
HOWE FIRE APPARATUS CO., Anderson, Ind.; fire engines and trucks	9,848
HUBER MFG. CO., Marion, Ohio; road construction equipment	4,912
HUDSON MOTOR CAR CO., Detroit, Mich.; ammunition components	143,824
ILLINOIS TOOL WORKS, Chicago, Ill.; shaping machines	18,020
IMPERIAL ELECTRIC CO., Akron, Ohio; sets, motor generator	10,764
INDEPENDENT PNEUMATIC TOOL CO., Chicago, Ill.; pneumatic drills & hammers and rotary air drills	21,476
INDIAN MOTORCYCLE CO., Springfield, Mass.; motorcycles	1,020,820
INDUSTRIAL BROWNHOIST CORP., Bay City, Mich.; Locomotive cranes	204,545
INDUSTRIAL TAPE CORP., New Brunswick, N. J.; adhesive tape and plaster	1,386
INGERSOLL RAND CO., New York City, N. Y.; air compressors, miscellaneous	1,902,809
INLAND STEEL CO., Chicago, Ill.; steel, sheet	39,579
INTERNATIONAL BUSINESS MACHINES CORP., New York, N. Y.; recorders	3,400



Saves Time, Saves Money with CURTIS AIR HOISTS

As in hundreds of other industrial plants throughout the country, Foster Brothers Mfg. Company, St. Louis, is saving time and money through the use of Curtis Air Hoists.

A Curtis Air Hoist is used to raise and lower bed springs as they are dipped for painting. Production is stepped up, costs are lowered and a better paint job is assured through the use of this Curtis air-operated equipment.

Curtis Air Hoists have many advantages over other types of power hoists. They offer you:

- Low first cost and low operating cost.
- Smoother, faster, more accurate control of loads.
- Variable hoisting and lowering speeds.
- Minimum dead weight — available in pendant, bracketed or rope compounded types.
- Immunity to abuse or overloads—not harmed by atmospheric conditions.
- Fewer production interruptions for servicing.
- Can be operated by ordinary labor.
- Capacities up to 10 tons.

If you have any hoisting problem in connection with production in your plant, it is probable that Curtis Air Hoists will speed up your work and lower production costs at the same time. Their cost is low, the advantages great. For complete information on Curtis Air Hoists and their many industrial uses, send the coupon below for free booklet, "How Air Is Being Used in Your Industry."

Curtis Pneumatic Machinery Company
1917 Kienlen Avenue, St. Louis, Missouri

Please send me your free booklet "How Air is Being Used in Your Industry" and further details concerning Curtis Air Hoists.

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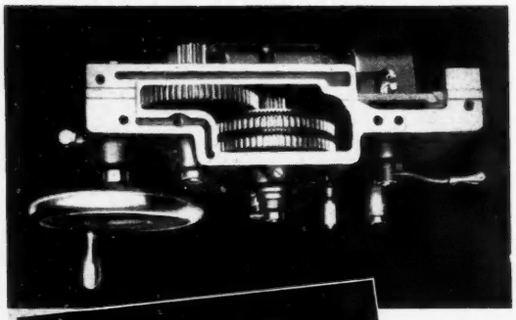
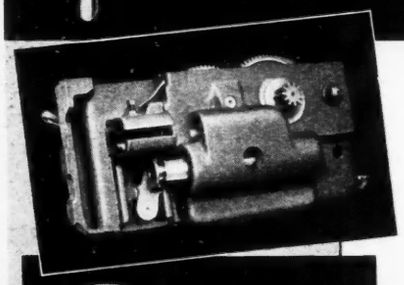
DEFENSE CONTRACTS

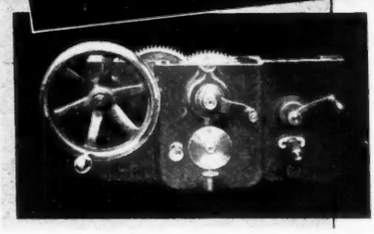
INTERNATIONAL CHAIN & MFG. CO., York, Pa.; pyramidal tents 15,150
INTERNATIONAL ENGINEER WORKS, INC., Framingham, Mass.; metal clothes lockers 5,057
INTERNATIONAL STACEY CORP., Columbus, Ohio; stretcher weights 30,115
INTERNATIONAL HARVESTER CO., Chicago, Ill.; trucks, tractors 4,709,083
INTERNATIONAL NICKEL CO., New York, N. Y.; copper nickel alloy rods & cylinders 1,139,959
IRWIN AUGER BIT CO., Wilmington, Ohio; screw drivers 3,048
JACOBS AIRCRAFT ENGINE CO., Pottstown, Pa.; maintenance parts 77,169
JAEGER MACHINE CO., Columbus, Ohio; machinery 30,523
JAEGER WATCH CO., INC., New York, N. Y.; clocks ... 275,854
C. R. JAHN CO., Chicago, Ill.; trailers 134,500
JEFFREY MFG. CO., Columbus, Ohio; machinery 3,245
JOHNS MANVILLE SALES CORP., New York, N. Y.; insulating equipment 130,614
JONES & LAMSON MACHINE CO., Springfield, Vt.; machines 347,187
JONES & LAUGHLIN STEEL CORP., Pittsburgh, Pa.; steel 192,042
EDW. KATZINGER CO., Chicago, Ill.; parts for field ranges 6,237
KEARNEY & TRECKER CORP., Milwaukee, Wis.; milling machines 910,997
KEASBEY & MATTISON CO., Ambler, Pa.; insulating material 49,581
O. C. KECKLEY CO., Chicago, Ill.; valves 11,490
KELLOGG SWITCHBOARD & SUPPLY CO., Chicago, Ill.; microphones 61,332
KENT OWENS MACHINE CO., Toledo, Ohio; machinery 2,464
KENNEDY MFG. CO., Van Wert, Ohio; tool kits 79,919
KERMATH MFG. CO., Detroit, Mich.; engines 77,660
KESTER SOLDER CO., Chicago, Ill.; solder 6,704
KIMBLE GLASS CO., Conshohocken, Pa.; laboratory supplies 26,923
KINGSBURY MACHINE TOOL CORPORATION, Keene, N. H.; machines 137,995
KINGSTON PRODUCTS CORP., Kokomo, Ind.; artillery ammunition 508,000
KIRK AND BLUM MFG. CO., Cincinnati, Ohio; equipment for field ranges 285,000
W. B. KNIGHT MACHINERY CO., St. Louis, Mo.; machines 24,298
KOPPERS COMPANY BARTLETT HAYWARD DIV., Baltimore, Md.; gun carriages 3,724,930
KRAEUTER & CO., INC., Newark, N. J.; cutting puncher. 28,402
KWICK MIX CONCRETE MIXER CO., Port Washington, Wis.; concrete mixers.. 1,514
LA CROSSE TRAILER & EQUIPMENT CO., La Crosse, Wis.; trailers 196,001
LAMSON CORP., Syracuse, N. Y.; small arms ammunition 442,161
LANDIS TOOL CO., Waynesboro, Pa.; machines 928,000
LA POINTE MACHINE TOOL CO., Hudson, Mass.; machines 295,545
LARSON TOOL & STAMPING CO., Attleboro, Mass.; tools 10,600
LA SALLE STEEL CO., Hammond, Ind.; steel 196,535
LATROBE ELECTRIC STEEL CO., New York, N. Y.; tool steel 56,605
LAVINE GEAR CO., Milwaukee, Wis.; trailers 996,319
R. K. LEBLOND MACHINE TOOL CO., Cincinnati, Ohio; lathes 145,455
LEE RUBBER AND TIRE CO. REPUBLIC RUBBER DIV., Youngstown, Ohio; hose 63,332
LEECE NEVILLE CO., Cleveland, Ohio; electric equipment 1,359,478
LEEDS & NORTHRUP CO., Philadelphia, Pa.; precision instruments 23,446
LEES BRADNER CO., Cleveland, Ohio; machines 43,894
LEIMAN BROS., INC., Newark, N. J.; pumps 10,608
LELAND GIFFORD CO., Worcester, Mass.; machines ... 114,417
LE ROI CO., Milwaukee, Wis.; air compressors 2,181,260
LEVENE MOTOR CO., Philadelphia, Pa.; electric equipment 5,584
LEWIS ENGINEERING CO., indicators, switches 41,580
LINCOLN ELECTRIC CO., Cleveland, Ohio; arc welders 11,245
LINDBERG ENGINEERING CO., Chicago, Ill.; electric furnaces 65,006

As Simple . . . As 1 + 1
As Positive . . . As Tomorrow
As Powerful . . . As Niagara Falls

THE LEBLOND POSITIVE JAW FEED CLUTCH







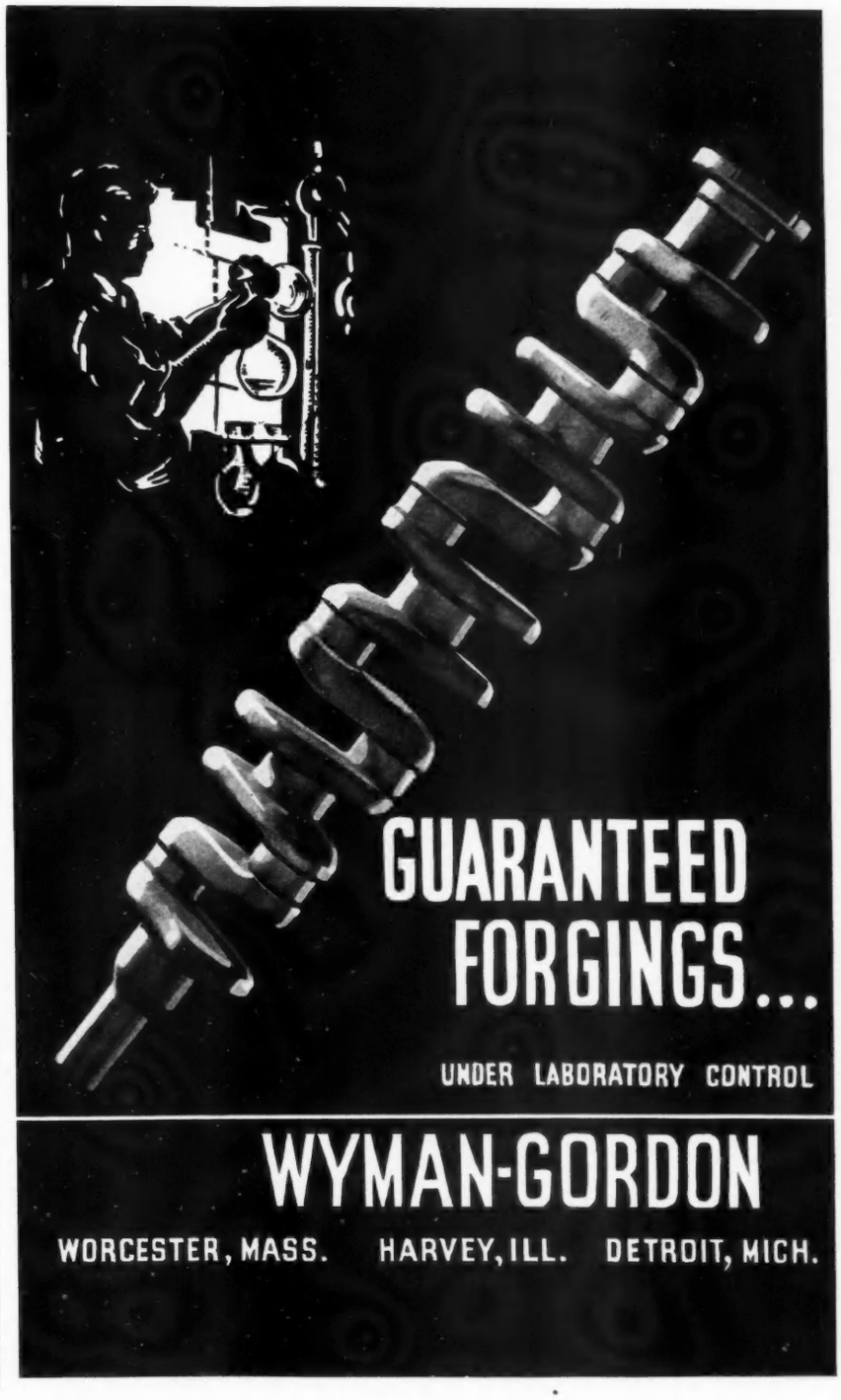
No Binding • No Slipping • No Groping For Controls

When LeBlond revolutionized apron operation by the positive jaw feed clutch—the big headache of friction feeds was cured. This positively powerful—powerfully positive clutch spelled the end of slipping, sticking—trouble-making friction feeds. It marked the beginning of a new ease in lathe operation—new precision—new power—no more spoiled work or wrecked machines. And just one lever controls this smooth, constant, powerful feed—both longitudinal and cross—just one lever—which also releases the apron gears when engaging the lead screw. In addition, an automatic stop provides full protection to the lathe. Simple—Positive—Powerful—the positive jaw feed clutch is one among many features that assure outstanding performance—in Lathes by LeBlond.

THE R. K. LeBLOND MACHINE TOOL CO.
Dept. A.I.-1
CINCINNATI OHIO

DEFENSE CONTRACTS

LINDE AIR PRODUCTS CO., New York, N. Y.; welding equipment 33,952
LINK BELT CORPORATION, Indianapolis, Ind.
INDIANA DIV., Indianapolis, Ind.; ammunition components 155,000
EWART PLANT, Indianapolis, Ind.; ammunition components 77,350
PHILADELPHIA DIV., Philadelphia, Pa.; screening unit. 4,720
LOCKHEED AIRCRAFT CORP., Burbank, Calif.; airplanes & parts 46,400,651
LOGE & SHIPLEY MACHINE TOOL CO., Cincinnati, Ohio; lathes 794,287
LOGAN CO., Louisville, Ky.; cots and beds 390,380
LOGANSPORT MACHINE, INC., Logansport, Ind.; machines. 61,450
LOUDEN MACHINERY CO., Albany, N. Y.; conveyor systems 2,262
LUCAS MACHINE TOOL CO., Cleveland, Ohio; machines.. 9,540
LUFKIN SALE CO., Saginaw, Mich.; gages & measuring tape 56,915
LUKENS STEEL CO., Coatesville, Pa.; steel & misc. equipment 1,125,839
LYON METAL PRODUCTS, INC., Aurora, Ill.; metal cabinets, etc. 483,970
McCABLE POWERS AUTO BODY CO., St. Louis, Mo.; trailers 5,360
McCORD RADIATOR & MFG. CO., Detroit, Mich.; small arms material 958,584
McGEAN CHEMICAL CO., Cleveland, Ohio; linoleate, manganese 9,000
McGILL MFG. CO., Valparaiso, Ind.; bearings 5,975
McKAY COMPANY, Pittsburgh, Pa.; chains & fittings..... 315,161
McKENNA METALS CO., Latrobe, Pa.; lathes 6,971
McLAREN SCREW PRODUCTS CO., Detroit, Mich.; ammunition components 15,379
MACK INTERNATIONAL MOTOR TRUCK CO., Long Island City, N. Y.; trucks.. 4,584,212
MACKINTOSH HEMPHILL CO., Pittsburgh, Pa.; steel castings 42,241
MAGNAFLUX CORPORATION, Chicago, Ill.; tools 391,710
MAINE STEEL, INC., Portland, Me.; equipment 225,043
MALL TOOL CO., Chicago, Ill.; Tools 359,238
P. R. MALLORY & CO., INC., Indianapolis, Ind.; misc. equipment 758,919
MANHATTAN PERFORATED METAL CO., INC., Long Island, N. Y.; brass 1,799
MANUFACTURERS BRUSH CO., Cleveland, Ohio; brushes 27,067
MARMON HERRINGTON, INC., Indianapolis, Ind.; trucks & spare parts 191,926
GLENN L. MARTIN CO., Baltimore, Md.; armament equipment 222,036,046
MATHIESON ALKALI WORKS, New York, N. Y.; supplies.. 3,100
MATTISON MACHINE WORKS, Rockford, Ill.; grinders & tools 51,181
FRED MEDART MFG. CO., St. Louis, Mo.; metal lockers... 45,440
MEILI BLUMBERG CORP., New Holsteen, Wis.; trailers.... 11,540
MERCER RUBBER CO., Hamilton Square, N. J.; water hose 68,960
MERCK & CO., Rahway, N. J.; drugs 42,651
MERCURY MFG. CO., Chicago, Ill.; trucks & tractors..... 50,078
MESTA MACHINE CO., Pittsburgh, Pa.; artillery materiel 8,525,000
MICROMATIC HONE CORP., Detroit, Mich.; machines... 2,668
MIDVALE CO., Philadelphia, Pa.; ordnance material 15,967,523
MID WEST DYNAMOMETER & ENGRAVING CO., Chicago, Ill.; dynamometers..... 2,520
A. J. MILLER AUTO CRUISER TRAILER CO., Bradenton, Fla.; trailers 485,146
ALEXANDER MILBURN CO., Baltimore, Md.; oxyacetylene torches 46,060
MILLERS FALLS CO., Greenfield, Mass.; surveying instruments 27,883
MILLER RUBBER COMPANY, INC., Akron, Ohio; rubber gloves 23,505
MILWAUKEE ELECTRIC TOOL CORP., Milwaukee, Wis.; electric drills 53,011
MILWAUKEE SADDLERY CO., Milwaukee, Wis.; cantle bags 25,533
MITCHELL & SMITH, INC., Detroit, Mich.; cork..... 15,216
MINE SAFETY APPLIANCES CO., Pittsburgh, Pa.; safety equipment 1,608,989
MINNESOTA MINING & MFG. CO., St. Paul, Minn.; tape & garnet paper 255,445



DEFENSE CONTRACTS

MOLDED INSULATION CO., Philadelphia; ammunition components & misc. equipment 326,699
MOLINE FORGE, INC., Moline, Ill.; ammunition components 496,000
MONARCH MACHINE TOOL CO., Sidney, Ohio; lathes... 535,591
MONROE AUTO EQUIPMENT CO., Monroe, Mich.; bomb assemblies 9,898
MONSANTO CHEMICAL CO., Springfield, Mass.; chemicals 25,776
MORGAN ENGINEERING CO., Alliance, Ohio; electric cranes 118,540
MORSE TWIST DRILL & MACHINE CO., New Bedford, Mass.; tools 1,221
MORTON MFG. CO., Muskegon Heights, Mich.; machine.... 113,000
MOTO SCOOT MFG. CO., Chicago, Ill.; misc. equipment.. 242,739
MOTOR TOOL MFG. CO., Detroit, Mich.; tools, jigs and fixtures 42,320
MOTOR WHEEL CORP., Lansing, Mich.; wheels, discs & rims 2,982
MUELLER BRASS CO., Port Huron, Mich.; brass 537,100
MULLINGS MFG. CO., Salem, Ohio; ammunition components 4,980,300
CHARLES MUNDT & SONS, Jersey City, N. J.; metal.... 32,564
NATIONAL ACME CO., Cleveland, Ohio; chucking machines 2,249,355
NATIONAL AUTOMATIC TOOL CO., Richmond, Ind.; drilling machines 4,560
NATIONAL AUTOMOTIVE FIBRES, INC., Detroit, Mich.; cotton filled comforters..... 127,560
NATIONAL BATTERY CO., St. Paul, Minn.; storage batteries 48,057
NATIONAL BROACH & MACHINE CO., Detroit, Mich.; machines 276,716
NATIONAL CARBIDE CORP., New York, N. Y.; calcium-carbide 23,970
NATIONAL CARBON CO., New York, N. Y.; flashlight equipment 104,973
NATIONAL CYLINDER GAS CO., Chicago, Ill.; chemicals 16,750
NATIONAL ELECTRIC PRODUCTS CORP., Pittsburgh, Pa., cable 651,494
NATIONAL ENAMELING & STAMPING CO., Milwaukee, Wis.; galvanized steel drums 250,822
NATIONAL ENGINEERING CO., Chicago, Ill.; sand mixing machine 14,701
NATIONAL FORGE & ORDNANCE CO., Irvine, Pa.; ordnance material 1,218,087
NATIONAL LEAD CO., Baltimore, Md.; solder & misc. metal 87,722
NATIONAL MACHINE PRODUCTS CO., Detroit, Mich.; brass nuts 21,504
NATIONAL MALLEABLE & STEEL CASTING CO., Cleveland, Ohio; ammunition components 2,460,819
NATIONAL PNEUMATIC CO., INC., New York, N. Y.; infantry weapons 10,312
NATIONAL SCREW & MFG. CO., Cleveland, Ohio; cotter pins 5,032
NATIONAL STAMPING CO., Detroit, Mich.; angletubes... 14,850
NATIONAL SUPPLY CO., Superior Engine Div., Philadelphia, Pa.; engines..... 648,810
NATIONAL TOOL CO., Cleveland, Ohio; milling cutters... 1,109
NATIONAL TUBE CO., Pittsburgh, Pa.; ammunition components 5,179,697
NATIONAL TWIST DRILL & TOOL CO., Detroit, Mich.; twist drills 526,194
NATIONAL VULCANIZED FIBRE CO., Wilmington, Del.; insulating fibre 5,672
HERMAN NELSON CORP., Moline, Ill.; small arms..... 15,268
N. P. NELSON IRON WORKS, INC., Passaic, N. J.; road construction equipment 15,240
NEW ENGLAND AUTO PRODUCTS CORP., Pottstown, Pa.; ammunition components 3,470
NEW HAVEN CLOCK CO., New Haven, Conn.; clock switches 5,000
NEW BRITAIN MACHINE CO., New Britain, Conn.; automatic chucking machines... 77,880
NICHOLSON FILE CO., Providence, R. I.; files & rasps... 169,532
N. J. ZINC CO., New York, N. Y.; zinc 173,009
NIAGARA MACHINE & TOOL WORKS, Buffalo, N. Y.; presses & misc. machines... 12,676
NIAGARA MOTORS CO., Dunkirk, N. Y.; forgings..... 28,360
NIAGARA SEARCHLIGHT CO., INC.; Niagara Falls, N. Y.; flashlights 13,229
NOBLE & WESTBROOK MFG. CO., East Hartford, Conn.; marking machines 7,467

WHICH **MICHIANA** FILTER DO YOU PREFER?

REPLACEABLE CARTRIDGE TYPE OR RE-PACKABLE ELEMENT TYPE

BOTH ARE Duo-Flo

Cat. No. 15100 Cat. No. 2500

At left— to Service, Complete element is replaced

At right— to Service, Remove used Wastex and pack with new supply

• Both types are built on the double depth Duo-Flo principle for thorough filtering service. Both types are selected by engineers and installed as standard equipment by truck and bus manufacturers, engine builders and on farm tractors, construction and road equipment. They are used by the tens of thousands by fleet owners.

• The No. 15100 has an easily replaceable cartridge—while the No. 2500 is furnished with a Re-Packable filter element in which only the filtering material — Wastex — needs replacing. Each cuts oil costs — reduces engine maintenance—and provides low filter maintenance costs as well.

• Equip a few of your vehicles now and let the "cost-reducing" results determine your further installations . . . Bulletin on request. MICHIANA PRODUCTS CORP., Michigan City, Indiana.

MICHIANA
Duo-Flo OIL FILTERS

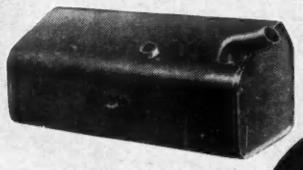
Write for Bulletin 839

DEFENSE CONTRACTS

NOBLITT SPARKES INDUSTRIES, INC., Columbus, Ind.; ammunition components 352,073
NORTH AMERICAN AVIATION, INC., Inglewood, Calif.; airplane parts 110,898,222
NORTH AMERICAN SMELTING CO., Philadelphia, Pa.; metal & solder 39,690
NORTON CO., Worcester, Mass.; machines 151,583
OHIO CHEMICAL & MFG. CO., Cleveland, Ohio; surgical instruments 1,963
OHIO INJECTOR CO., Wadsworth, Ohio; valves 134,527
OHIO SEAMLESS TUBE CO., Shelby, Ohio; steel tubing... 5,038
OKONITE CO., New York, N. Y.; misc. cables 673,470
OLIVER FARM EQUIPMENT CO., Chicago, Ill.; misc. equipment 782,118
OLIVER INSTRUMENT CO., Adrian, Mich.; grinding machines 2,805
OLIVER IRON & STEEL CORP., Pittsburgh, Pa.; ammunition equipment 303,131
OLIVER MACHINERY CO., Grand Rapids, Mich.; machines 36,123
ONSRUD MACHINE WORKS, INC., Chicago, Ill.; machines 61,355
OSBORN & SEXTON MACHINERY CO., Columbus, Ohio; woodworking machines..... 2,550
OSHKOSH FOUR WHEEL DRIVE SALES AGENCY, Oshkosh, Wis.; 1 tractor truck 16,500
OUTBOARD, MARINE & MFG. CO., Waukegan, Ill.; motors & spare parts 104,479
PAASCHE AIRBRUSH CO., INC., Chicago, Ill.; paint spraying equipment 10,218
PACIFIC CAR & FOUNDRY CO., Renton, Wash.; railroad cars, covered lighter..... 54,745
PACKARD MOTOR CAR CO., Detroit, Mich., Detroit, Mich.; manufacture of cars and Rolls Royce Aeronautical engines 62,611,799
PACIFIC MILLS, Boston, Mass.; flannel shirting 4,686,238
PANGBORN CORPORATION, Hagerstown, Md.; machines. 17,000
PANTASOTE CO., INC., Passaic, N. J.; processed cotton fabric 24,647
PARKER APPLIANCE CO., Cleveland, Ohio; tube benders 6,700
PARSONS CO., Detroit, Mich.; assemblies, metal parts 115,393
PECK, STOW & WILCOX CO., Southington, Conn.; ratchet braces, nippers & pliers..... 70,001
PENNSYLVANIA FLEXIBLE METALLIC TUBING CO., Philadelphia, Pa.; bronze fuel oil & steam hose..... 8,484
PENNSYLVANIA PUMP & COMPRESSOR CO., Easton, Pa.; compressor units..... 3,651
PENNSYLVANIA SALT MFG. CO., Philadelphia, Pa.; caustic soda 94,000
PENNSYLVANIA SMELTING & REFINING CO., Philadelphia, Pa.; chemicals..... 26,400
PERMUTIT CO., New York, N. Y.; feed water heater... 6,352
PEORIA MALLEABLE CASTINGS CO., Peoria, Ill.; thumb nuts 1,881
PETERS ENGINEERING CO., Philadelphia, Pa.; machines, tools, dies & gages..... 19,990
PFAUDLER CO., Rochester, N. Y.; steel reactors, machinery 471,221
PHELPS DODGE COPPER PRODUCTS CORP., New York, N. Y.; electric cables and wire 1,720,669
PHILCO CORP., Philadelphia, Pa.; artillery ammunition components 2,098,600
PIKE TRAILER CO., Los Angeles, Calif.; trailers..... 8,079
PIONEER AIR COMPRESSOR, INC., New York, N. Y.; air compressors 14,414
PIQUA MUNISING WOOD PRODUCTS CO., Cleveland, Ohio; shelter tent poles..... 36,400
PITTSBURGH FORGINGS CO., Pittsburgh, Pa.; alloy steel forgings 12,135
PITTSBURGH PLATE GLASS CO., Pittsburgh, Pa.; glazing of bldg., Maxwell Field, Ala. 278
BRUSH DIVISION, Baltimore, Md.; brushes..... 14,697
PITTSBURGH STEEL CO., Pittsburgh, Pa.; steel tubing and barbed wire..... 87,142
PLOMB TOOL CO., Los Angeles, Calif.; tools and equipment 119,062
PLYMOUTH RUBBER CO., INC., Canton, Mass.; adhesive, fabric, friction tape... 13,785
JOSEPH POLLAK CORP., Boston, Mass.; holders..... 9,653
POLLAK MANUFACTURING CO., Arlington, N. J.; armament equipment..... 237,500

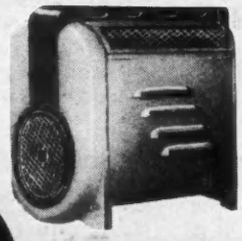
TANKS

Oil — Gasoline — Water
Soldered or welded of any shape or size to fill the requisites of your application.



HOUSINGS

In streamline or conventional design for engine or product enclosures.



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FENDERS

Produced to individual requirements from standard or special rolls—4″ to 23″ wide.

HOODS

Specially made for mobile or stationary units—standard dies permit many economies.

FOR ESTIMATES ON YOUR NEEDS WRITE
STOLPER STEEL PRODUCTS CORP.
3257 W. FOND DU LAC AVE • MILWAUKEE, WIS.

DEFENSE CONTRACTS

POOR & COMPANY, Canton, Ohio, artillery materiel 32,170
POTTER & JOHNSTON MACHINE CO., Pawtucket, R. I.; turret lathe..... 8,526
PORTLAND FORGE & FOUNDRY CO., Portland, Ind.; ammunition components..... 94,000
PRATT INDUSTRIES, INC., Frankfort, N. Y.; ammunition components..... 236,242
PRATT & WHITNEY DIV., NILES - BEMENT - POND CO., W. Hartford, Conn.; machinery and equipment... 1,820,688
PRECISION SCIENTIFIC CO., Chicago, Ill.; laboratory equipment 252,885
PRESSED STEEL CAR CO., Pittsburgh, Pa.; artillery ammunition components 1,230,000
PROCTOR & SCHWARTZ, Philadelphia, Pa.; dryers..... 9,220
PRODUCTION MACHINE CO., Greenfield, Mass.; polishing machines 4,374
PROTECTOSEAL CO. OF AMERICA, INC., Chicago, Ill.; gasoline cans..... 20,060
PUBLICKER COMMERCIAL ALCOHOL CO., Philadelphia, Pa.; alcohol..... 28,401
PYRENE MFG. CO., Newark, N. J.; fire extinguishers, trucks, gas, carbon dioxide.. 302,787
QUAKER CITY IRON WORKS, Philadelphia, Pa.; storage tanks 3,078

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is like an "automobile row"—you meet so many friends in the automotive trade. They, too, like the Bismarck with its good food and cheerful service, and stop here regularly.

Automobile men know what's what in hotel accommodations. That's why we feel proud that they choose the Bismarck. Maybe its the comfortable rooms or the convenient location. Anyway they come back.

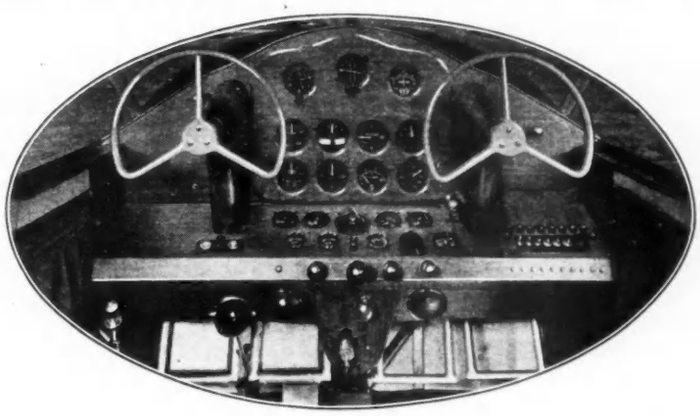
OTTO K. EITEL
Manager

QUAKER RUBBER CORP., Philadelphia, Pa.; water hose and rubber packing..... 34,186
RACINE TOOL & MACHINE CO., Racine, Wis.; hack saws 14,762
RADIO CORPORATION OF AMERICA, Camden, N. J.; radio receivers and sound motion pictures equipment.. 11,395,971
RASMUSSEN MACHINE CO., INC., Racine, Wis.; hack saws and motor launches... 29,342
RAYBESTOS MANHATTAN, INC., Manheim, Pa.
U. S. ASBESTOS DIV., asbestos cloth 23,894
MANHATTAN RUBBER MFG. DIV., oil hose, rubber mats 87,912
RAY-O-VAC CO., Madison, Wis.; dry batteries..... 5,679
READING CHAIN & BLOCK CORPORATION, Reading, Pa.; chain hoist..... 40,950
REED & PRINCE MFG. CO.; Worcester, Mass.; brass, wood screws 23,616
REED PRENTICE CORP., Worcester, Mass.; engine lathes 412,176
REED SMALL TOOL WORKS, Worcester, Mass.; calipers & gages 12,773
REO MOTOR CAR CO., Lansing, Mich.; trucks 445,710
REPUBLIC AVIATION CORP., Farmingdale, L. I., N. Y.; pursuit airplanes & spare parts 61,775,074
REPUBLIC STEEL CORP., Cleveland, Ohio; small arms material and ammunition parts 391,185
RESINOUR PRODUCTS & CHEMICAL CO., Philadelphia, Pa.; synthetic resin... 22,750
REVERE COPPER & BRASS CO., INC., New York, N. Y.; ammunition parts 7,238,347
REYNOLDS METAL CO., Richmond, Va.; aluminum..... 101,001
JAS. H. RHODES & CO., Chicago, Ill.; steel wool..... 10,105
RIVETT LATHE & GRINDER CORP., Boston, Mass.; lathes, machines 14,005
ROBBINS & MYERS, INC., Springfield, Ohio; hoists, motor driven 12,627
H. H. ROBERTSON CO., Pittsburgh, Pa.; coated metal roofing 5,500
ROCKFORD MACHINE TOOL CO., Rockford, Ill.; miscellaneous 218,082
W. S. ROCKWELL CO., New York, N. Y.; forge furnaces 150,762
ROCKWOOD SPRINKLER CO., Worcester, Mass.; sprinkler system 15,500
JOHN A. ROEBLING'S SONS CO., Trenton, N. J.; miscellaneous electrical equipment 359,411
ROGERS BROS. CORP., Albion, Pa.; trailers..... 142,798
ROHM & HAAS CO., Philadelphia, Pa.; transparent flame resisting plastic 244,318
ROME CABLE CORP., Rome, N. Y.; copper wire..... 43,730
B. M. ROOT CO., York, Pa.; machines and wood borers..... 16,705
ROSEMAN TRACTOR MOWER CO., Evanston, Ill.; lawn mowers 26,445
ROYAL GLASS WORKS CORP., Long Island City, N. Y.; plate glass 12,001
RUSSELL, BURDSALL & WARD, Bolt & Nut Co., Port Chester, N. Y.; nuts and bolts 72,725
RUSSELL MFG. CO., Middletown, Conn.; webbing and miscellaneous parts 344,944

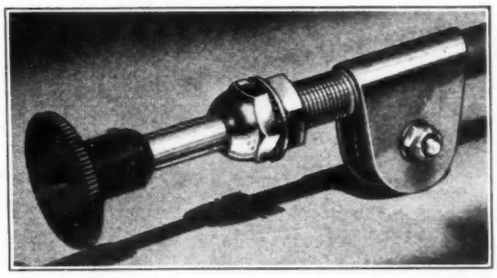
DEFENSE CONTRACTS

RYAN AERONAUTICAL CORP., San Diego, Calif.; airplanes	7,491,582
JOSEPH T. RYERSON & SON, INC., Chicago, Ill.; steel tubing, machines	253,487
SAFETEE GLASS CO., Philadelphia, Pa.; laminated lens	132,000
SAGINAW STAMPING & TOOL CO., Saginaw, Mich.; trailers	852,383
SAGINAW STEERING GEAR DIV., Saginaw, Mich.; machine guns	61,398,892
SCHAUER MACHINE CO., Cincinnati, Ohio; polishing & finishing machines	2,463
GEORGE T. SCHMIDT, INC., Chicago, Ill.; marking machines	2,825
SCHWITZER CUMMINS CO., Indianapolis, Ind.; artillery ammunition components	1,896,721
SCOVILL MFG. CO., Waterbury, Conn.; artillery ammunition components	12,620,773
SEAGRAVE CORP., Columbus, Ohio; fire engines	108,380
SEAMLESS RUBBER CO., New Haven, Conn.; surgical dressings	50,675
SEBASTIAN LATHE CO., Cincinnati, Ohio; engine lathes.	51,064
SERVICE CASTER & TRUCK CO., Albion, Mich.; steel platform skids, machines	16,932
SEIBERLING RUBBER CO., Akron, Ohio; tires and tubes	57,384
WILLIAM SELLERS & CO., INC.; Philadelphia, Pa.; miscellaneous machines	3,935,937
L. F. SEYFERTS SONS, INC., Phila., Pa.; ripsaws	1,016
SEYMOUR PRODUCTS CO., Seymour, Conn.; small arms material	61,939
SHEFFIELD GAGE CORP., Dayton, Ohio; gages and gaging machines	83,126
HENRY H. SHEIP MFG. CO., Phila., Pa.; field equipment.	19,433
SHEPARD NILES CRANE AND HOIST CO., Montour Falls, N. Y.; cranes	138,674
SHERWIN - WILLIAMS CO., Cleveland, Ohio; paint, etc.	122,857
SHULER AXLE CO., INC., Louisville, Ky.; artillery material	32,844
SIDNEY MACHINE TOOL CO., Sidney, Ohio; engine lathes.	40,248
SILENT HOIST WINCH & CRANE CO., Brooklyn, N. Y.; cranes, tractors and crane cars	24,850
SIMPLEX WIRE & CABLE CO., Cambridge, Mass.; cables	262,137
SLAYMAKER LOCK CO., Lancaster, Pa.; padlocks	11,800
A. O. SMITH CORP., Milwaukee, Wis.; artillery ammunition	3,561,500
SMITH BROS. MFG. CO., Findlay, Ohio; artillery ammunition components	128,384
SNAP ON TOOLS CORPORATION, Kenosha, Wis.; tools	39,315
SOUTHERN WEAVING CO., Greenville, S. C.; webbing and miscellaneous parts	85,455
SPAULDING FIBRE CO., INC., Camden, N. J.; unit boxes	6,450
SPECIALTY AUTO FABRIC CO., New York, N. Y.; colt clippers	5,400
SPICER MANUFACTURING CORP., Toledo, Ohio; automotive equipment	1,706,046
CHARLES FISCHER SPRING CO., Brooklyn, N. Y.; small arms material	93,115
SQUARE D CO., Detroit, Mich.; altimeter assemblies	108,735
STANDARD DRY KILN CO., Indianapolis, Ind.; equipment for drying kilns	10,155

Mastery of the Air with ARENS CONTROLS



ARENS CONTROLS are shown here in a familiar setting, that of an airplane instrument panel. Parking brake, throttle, mixture, spark, carburetor air and other controls pictured here are all ARENS. With a record of installations dating back to the early days of aviation, ARENS CONTROLS have figured in many famous flights. Our military air branches alone have found forty different applications for ARENS CONTROLS, including propeller pitch, bomb safety, and bomb release devices. Through intricate maneuvers when the safety of the pilot and his companions depends upon complete mastery of the air, ARENS CONTROLS operate with every degree of the accuracy and reliability for which they were designed. Naturally, since they pass such rigid military standards they have the full approval of the Civil Aeronautics Authority for private and commercial uses.



The ARENS VERNIER TYPE control offers coarse and fine adjustment in a single unit. Coarse adjustment is obtained by pulling or pushing the knob; fine adjustment by rotating the same knob. Always in mesh, the coarse or fine adjustment can be used in any part of its travel.

Aviation, however, is not the only field in which the name of ARENS is noted for fine controls. Throughout the automotive and marine manufacturing industries ARENS CONTROLS have earned recognition for their precision and reliability. National Defense uses include tanks, motor torpedo boats, rescue boats, destroyers, etc. Air Conditioning and Radio are two other fields, and an ever increasing demand is growing among industrial manufacturers. ARENS CONTROLS are supplied singly or in quantities.

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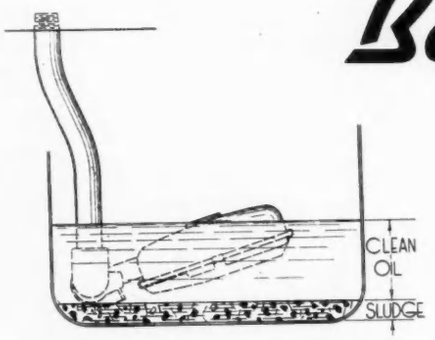
DEFENSE CONTRACTS

STANDARD FORGINGS CO., Chicago, Ill.; ammunition components 624,000
STANDARD GAGE CO., INC., Poughkeepsie, N. Y.; gages. 32,165
STANDARD MACHINERY CO., Providence, R. I.; artillery equipment 29,599
STANDARD PRESSED STEEL CO., Jenkintown, Pa.; ammunition components, etc... 2,106,548
STANDARD PRODUCTS CO., Detroit, Mich.; artillery ammunition 4,500
STANDARD STEEL WORKS, N. Kansas City, Mo.; trailers and trailers equipment.. 526,468
STANLEY WORKS, New Britain, Conn.; outlet valve guards 16,000
STAR DRILLING MACHINE CO., Akron, Ohio; artillery material components and well drilling machines 46,634
STAR ELECTRIC MOTOR CO., Bloomfield, N. J.; motors, brakes, hoists 8,492
L. S. STARRETT CO., Athol, Mass.; gages, calipers, etc.. 65,369
STEEL IMPROVEMENT & FORGE CO., Cleveland, Ohio; steel forgings 100,373
STEEL PRODUCTS ENGINEERING CO., Springfield, Ohio; propeller hub assemblies 74,767
STERLING ELECTRIC MOTORS, INC., Los Angeles, Calif.; Geared-head type motors 5,506
STERLING VARNISH CO., Haysville, Pa.; insulating varnish 5,620
STEVENS WALDEN, INC., Worcester, Mass.; small arms material, etc. 146,735
STEWART MOTOR CORP., Buffalo, N. Y.; motor trucks, buses, station wagons 164,036
STEWART WARNER CORP., Chicago, Ill.; artillery materiel 4,931,689
WATSON STILLMAN CO., Roselle, N. J.; presses 49,400
EDWIN B. STIMPSON, Brooklyn, N. Y.; material for pyramidal tents 3,774
F. J. STOKES MACHINE CO., Phila., Pa.; miscellaneous machinery 91,979
STROMBERG CARLSON TEL. MFG. CO., Rochester, N. Y.; switchboards and equipment 1,500,867
STORMS DROP FORGING CO., Springfield, Mass.; nickel copper alloy steel forgings.. 21,389
STOW MANUFACTURING CO., INC., Binghamton, N. Y.; small arms materiel..... 36,860
STUDEBAKER CORP., South Bend, Ind.; aircraft engines 33,682,580
B. F. STURTEVANT CO., Boston, Mass.; dust collector systems and compressors... 12,565
SULLIVAN MACHINERY CO., Michigan City, Ind.; air compressors 51,085
SUPERIOR DIE CASTING CO., Cleveland, Ohio; ammunition components 2,346
SUPERIOR FLAKE GRAPHITE CO., Chicago, Ill.; graphite 1,638
SURFACE COMBUSTION CORP., Toledo, Ohio; machinery and furnaces 72,240
SUPERIOR TRAILER MFG. CORP., Indianapolis, Ind.; trailers 528,026
TABAR MFG. CO., Philadelphia, Pa.; machines 6,402
TAFT PIERCE MFG. CO., Woonsocket, R. I.; gages... 59,251
C. J. TAGLIABUE MFG. CO., Brooklyn, N. Y.; thermometers 10,780
TANNEWITZ WORKS, Grand Rapids, Mich.; machines ... 2,400
JAMES L. TAYLOR MFG. CO., Poughkeepsie, N. Y.; clamps 6,192
S. G. TAYLOR CHAIN CO., Hammond, Ind.; chains & fittings 14,607
TAYLOR INSTRUMENT COMPANIES, Rochester, N. Y.; compasses & misc. instruments 49,860
TEMPLETON, KENLEY & CO., Chicago, Ill.; jacks 30,290
TEXTILEATHER CORP., Toledo, Ohio; artificial leather 10,455
THEW SHOVEL CO., Lorain, Ohio; crane truck 13,730
THOMPSON GRINDER CO., Springfield, Ohio; machines. 62,000
THOMSON GIBB ELECTRIC WELDING CO., Lynn, Mass.; machines 20,920
THOMPSON PRODUCTS, INC., Cleveland, Ohio; fuel equipment 330,100
HENRY G. THOMPSON & SON CO., New Haven, Conn.; hacksaw blades 66,375
THORREZ & MAES MFG. CO., Jackson, Mich.; ammunition components 187,830
THURSTON MFG. CO., Providence, R. I.; tools 17,439
THWING ALBERT INSTRUMENT CO., Philadelphia, Pa.; instruments 72,700

FLOAT-O

The FLOAT-O Family Keeps Pace with the Automotive Industry

Because



It supplies bearings with the "CREAM" of the OIL..... from the top of the Crankcase

The sludge, filings and heavy abrasives which cause serious engine wear and inefficiency naturally precipitate to the bottom of the crankcase. FLOAT-O, installed at the pump intake, draws horizontally from the clean oil found at the top . . . it does not disturb the harmful substances found at the bottom of the crankcase. With FLOAT-O only this "cream" of the oil sump is distributed to the bearings. This is true during starting and all running conditions. FLOAT-O is also a definite guarantee against ice-locking. Indorsed and approved by the leading research engineers of the industry, FLOAT-O insures smoother operation and longer life for engines.

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The following outstanding manufacturers use FLOAT-O:

Buda	Gen'l Motors of Canada, Ltd.	Plymouth
Buick	Gen'l Motors Truck & Coach	Seagrave Corp.
Cadillac-LaSalle	International Harvester Co.	Sterling Engine
Chrysler	Lycoming Motors	Studebaker
Chrysler Marines	Morris Motors, Ltd.	White Motors
DeSoto	Otto Engine	Willys-Americar
Dodge Cars and Trucks	Packard	Wolseley Motors, Ltd.

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ELKHART INDIANA

DEFENSE CONTRACTS

TIMKEN DETROIT AXLE CO., Detroit, Mich.; parts for artillery carriages 1,806,578
TIMKEN ROLLER BEARING CO., Steel & Tube Div., Canton, Ohio; steel 141,947
TITEFLEX METAL HOSE CO., Newark, N. J.; tubing & ignition assemblies 42,961
TOLEDO GENERAL MFG. CO., Toledo, Ohio; drills 6,329
TOLEDO SCALE CO., Toledo, Ohio; scales 1,335
TOMKINS JOHNSON CO., Jackson, Mich.; mfg. aids 2,726
TOOLS AND GAGES, INC., Cleveland, Ohio; gages 109,088
A. J. TOWER CO., Boston, Mass.; raincoats 409,224
TOWMOTOR CO., Cleveland, Ohio; tractors 14,990
TOWNSEND CO., New Brighton, Pa.; steel rivets 31,785
TRAILER CO. OF AMERICA, Cincinnati, Ohio; trailers ... 317,654
TRANSUE & WILLIAMS STEEL FORGING CORP., Alliance, Ohio; end connections 5,673
TUNGSTON CARBIDE TOOL CO., Detroit, Mich.; tools .. 1,216
UNION ASBESTOS & RUBBER CO., Cicero, Ill.; insulating material 409,149
UNION METAL MFG. CO., Canton, Ohio; pallets 2,752
UNION THREAD CO., Cincinnati, Ohio; thread 4,392
UNION TWIST DRILL CO., Athol, Mass.; misc. tools... 97,525
UNITED AIRCRAFT CORPORATION
HAMILTON STANDARD PROPELLERS DIV., E. Hartford, Conn.; propeller assemblies 1,776,559
PRATT & WHITNEY AIRCRAFT DIV., E. Hartford, Conn.; airplanes & parts.... 165,039,462
UNITED AIRPORT DIV., E. Hartford, Conn.; material to rebarrel cylinders 269,247
VOUGHT SIKORSKY AIRCRAFT DIV., Stratford, Conn.; airplanes & parts ... 28,717,736
UNITED CARR FASTENER CORP., Cambridge, Mass.; Dies & machines 39,774
U. S. ELECTRICAL TOOL CO., Cincinnati, Ohio; drills & buffers 102,932
UNITED STATES STEEL CORPORATION
AMERICAN STEEL & WIRE CO. OF N. J., Cleveland, Ohio; misc. cable 782,057
UNITED METAL HOSE CO., INC., Long Island, N. Y.; bronze steam hose 23,410
U. S. AUTOMATIC CORP., Amherst, Ohio; ammunition components 88,516
U. S. AXLE CO., INC., Pottstown, Pa.; engine overhaul stands 8,748
UNITED STATES ELECTRIC MFG. CORP., New York, N. Y.; flashlight batteries .. 82,768
UNITED STATES GAUGE CO., New York, N. Y.; precision instruments 136,582
U. S. INDUSTRIAL CHEMICALS, INC., New York, N. Y.; chemicals 230,346
UNITED STATES MOTOR CORP., Oshkosh, Wis.; engine generators 7,674
UNITED STATES RUBBER CO., New York, N. Y.; rubber goods 2,657,917
U. S. STEEL CORPORATION, New York, N. Y.; ammunition & armor plate 22,426,974
UNITED WIRE & SUPPLY CORP., Providence, R. I.; tubing 30,703
UNIVERSAL BORING MACHINE CO., Hudson, Mass.; machines 40,752
UNIVERSAL CYCLOPS STEEL CORP., Bridgeville, Pa.; ammunition & steel rods 153,485
UPSON WALTON CO., Cleveland, Ohio; wire rope, etc... 114,364
UTICA DROP FORGE & TOOL CORP., Utica, N. Y.; pliers. 179,753
VACUUM CAN CO., Chicago, Ill.; vacuum carriers 12,512
VANADIUM ALLOYS STEEL CO., Pittsburgh, Pa.; tools.. 2,712
VANADIUM CORP. OF AMERICA, New York, N. Y.; ferrosilicon 7,216
VAN NORMAN MACHINE TOOL CO., Springfield, Mass.; machines 32,541
VEEDER ROOT, INC., Hartford, Conn.; machinery 22,399
VERMONT TAP & DIE CO., Lydonville, Vt.; taps & dies. 5,184
VERSON ALLSTEEL PRESS CO., Chicago, Ill.; machines 7,472
VICKERS, INC. (Sperry Corporation), Detroit, Mich.; hydraulic pumps 311,832
VILLAGE BLACKSMITH FOLKS, Watertown, Wis.; parts for field ranges 15,150
VIMALERT CO., LTD., Jersey City, N. J.; marine engine . 9,957

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"We have been enthusiastic users of 'Oildag' for over ten years", says Besler Systems, "and we find it the only material which will prevent bolts, nuts and flanges from seizing under high temperature and pressure conditions in our boilers.
"For this purpose, each man in our assembling department is provided with (a small can of) Concentrated 'Oildag' and a small solder brush with which he paints the threads on the bolt before screwing on the nut. Under this practice bolts have reached temperatures of at least 900° F., not only for long periods of time, but for many repetitions, and on dismantling were found to have been free." . . . . another example of the excellent service performed by "dag" colloidal graphite under severe conditions.
Many other high temperature lubrication successes are reported thoughout industry with "dag" colloidal graphite dispersed in various liquids, even volatile solvents. Write for "The Treatment of Screw Threads" and literature on this subject. Your oil supplier can furnish you a "dag" colloidal graphited product upon request.
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COLLOIDAL PRODUCTS
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DEFENSE CONTRACTS

VULCAN IRON WORKS, Wilkes-Barre, Pa.; locomotives 138,006
VULTEE AIRCRAFT, INC., Downey, Calif.; airplanes & spare parts 37,311,207
STEVENS WALDEN, INC., Worcester, Mass.; tools 1,905
WALLACE BARNES CO., Bristol, Conn.; small arms materiel 4,081
WALLACE SUPPLIES MFG. CO., Chicago, Ill.; manifold exhaust assemblies 21,831
WALTER MOTOR TRUCK CO., Long Island, N. Y.; tractor trucks 15,000
WALTHAM WATCH CO., Waltham, Mass.; ammunition components 122,359
WALWORTH CO., New York, N. Y.; pipes, valves, etc. ... 1,826,908
WARD LaFRANCE TRUCK CORP., Elmira, N. Y.; trucks 629,901
WARD LEONARD ELECTRIC CO., Mt. Vernon, N. Y.; electrical equipment 60,134
WARNER & SWASEY, Cleveland, Ohio; lathes 912,657
WARNER ELECTRIC BRAKE CO., Beloit, Wis.; brake & artillery material 63,474
WATERBURY BUTTON CO., Waterbury, Conn.; parts for field ranges 40,878
WATERBURY FARREL FOUNDRY & MACHINE CO., Waterbury, Conn.; machines... 163,425
WATERHOUSE CO., Webster, Mass.; artillery materiel ... 15,703

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Of all the many things that go to make up a modern car, none plays a more fundamental part than felt. First of all, it keeps a car running quietly! Felt in many places eliminates rattles and squeaks. Felt Washers retain lubricant for important bearings and joints.
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BRANCH OFFICES IN ALL PRINCIPAL CITIES
WESTERN
CUT BY THE MAKER
FELTS

WATSON STILLMAN CO., Roselle, N. J.; misc. presses 95,577
WAUKESHA MOTOR CO., Waukesha, Wis.; aircraft engine 23,654
WEATHERHEAD CO., Cleveland, Ohio; artillery ammunition 1,033,380
WEAVER MFG. CO., Springfield, Ill.; trucks & engine hoists 155,285
WEBER MACHINE CORP., Rochester, N. Y.; gages ... 2,168
WEIRTON STEEL CO., Weirton, W. Va.; steel 18,204
S. K. WELLMAN CO., Cleveland, Ohio; facing & rivets. 27,749
WESSON CO., Detroit, Mich.; drills 58,265
WEST & DODGE THREAD GAGE CO., INC., Boston, Mass.; gages 54,388
WESTCLOX DIVISION, GENERAL TIME INSTRUMENTS CORP., New York, N. Y.; ammunition components 44,069
WESTERN ARMS CO., New Haven, Conn.; ammunition components 9,500
WESTERN AUTO MACHINE SCREW CO., Elyria, Ohio; striker nuts 7,430
WESTERN FELT WORKS, Chicago, Ill.; felt 35,037
WESTINGHOUSE AIR BRAKE CO., Pittsburgh, Pa.; ammunition components 416,355
WESTINGHOUSE ELEC. & MFG. CO., Pittsburgh, Pa.; ammunition & electrical equip. 13,731,967
WESTINGHOUSE X-RAY CORP., Long Island City, N. Y.; X-ray equipment ... 140,955
WESTON ELECTRICAL INSTRUMENT CORP., Newark, N. J.; electrical instruments 2,113,354
WHEELER INDUSTRIES, E. Cleveland, Ohio; faceforms.. 17,358
WHEELER SHIPYARD, INC., Brooklyn, N. Y.; boats 62,590
WHITCOMB LOCOMOTIVE CO., Rochelle, Ill.; locomotives 106,080
S. S. WHITE DENTAL CO., Philadelphia, Pa.; dental equipment 416,125
WHITE MOTOR CO., Cleveland, Ohio; automotive equipment 45,418,869
WHITEHEAD & HOAG CO., Newark, N. J.; badges 1,140
WHITING CORP., Chicago, Ill.; rotary shear 6,617
WICKWIRE SPENCER STEEL CO., New York, N. Y.; wire & tin plate 28,032
WILLARD STORAGE BATTERY CO., Cleveland, Ohio; storage battery 70,996
J. H. WILLIAMS & CO., New York, N. Y.; artillery materiel components 13,923
WILLSON PRODUCTS, INC., Reading, Pa.; frames, lenses & helmets 53,718
WILLYS OVERLAND MOTORS, INC., Toledo, Ohio; trucks & ammunition 5,144,115
WILSON MECHANICAL INSTRUMENT CO., INC., New York, N. Y.; testers 1,712
WINCHESTER REPEATING ARMS CO., New Haven, Conn.; small arms materiel. 23,292
J. WISS & SONS, Newark, N. J.; sailmakers shears ... 11,892
WOLVERINE TUBE CO., Detroit, Mich.; condenser tubes 34,099
JOHN WOOD MFG. CO., Muskegon, Mich.; parts for tanks.. 382,674
S. A. WOODS MACHINE CO., Boston, Mass.; ammunition components 2,347,344

WORCESTER STAMPED METAL CO., Worcester, Mass.; ammunition components	7,280
WORTHINGTON PUMP & MACHINERY CO., Harrison, N. J.; pumps	548,970
YALE & TOWNE MFG. CO., New York, N. Y.; misc. equipment	690,563
YATES AMERICAN MACHINE CO., Beloit, Wis.; sander	63,447
YOUNG ENGINE CO., Canton, Ohio; generator sets	2,810
YOUNG RADIATOR CO., Racine, Wis.; automotive equipment	4,328
YOUNGSTOWN SHEET & TUBE CO., Youngstown, Ohio; steel	158,612

Government Agencies Need Technologists

The U. S. Civil Service Commission has announced an open competitive examination to secure technologists for national defense work in such branches as explosives, fuels, plastics, rubber, minerals, and textiles. Applications will be rated as received at Washington until Dec. 31, 1941.

The duties of the positions include the planning, conducting, and reporting of investigation or research in some specialized branch of technology such as explosives, fuels, plastics, rubber, minerals, and textiles; or the testing, designing, or manufacturing of the materials essential for the successful operation of an industrial plant.

Applicants must have completed a four-year college course with specialized major study or have equivalent professional experience, and, in addition, must have had a certain number of years of professional experience.

The positions are in several grades with salaries ranging from $2,600 to $5,600 a year. Competitors will not be given a written test, but will be rated upon their education and experience.

GOVERNMENT PLANTS

(*Continued from page* 258)

try's normal consumption. He would not forecast when operations will begin, but said good supplies of tin are on hand for defense needs.

Mr. Jones also told of plans for the construction of a plant with the aid of $9,250,000 in Federal funds, for the manufacture of magnesium, and said that the RFC is considering additional plans for the production of aluminum.

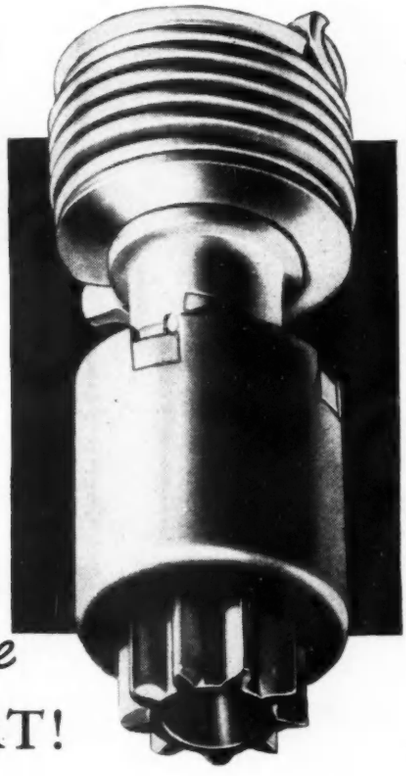
The magnesium plant is being built near San Francisco and melt Utah ore, Mr. Jones said, with an annual output of between 12,000 and 15,000 tons. It is to be a private operation of Henry J. Kaiser, who is said to have a new patent for production of the metal. Mr. Jones said that the Dow Chemical Co., is enlarging its Texas plant, which produces magnesium from sea water.

At present plans for more aluminum facilities through Government aid were said to be in the "study stage."

FAR EAST TENSION

(*Continued from page* 258)

need of furnace repairs, the decline in the steel mill operating rate, for the week ended Feb. 22, which the American Iron & Steel Institute estimates at 94.6 per cent of ingot capacity as compared with 97.1 per cent in the preceding week, some of this easing off is ascribed to a mild recession in the tension under which steel production has been in the previous six weeks. Although there is no let-up in the volume of fresh commitments being offered to steel mills, some of them being for fall shipment, the pressure of specifications has lessened slightly. There are many steel buyers who would like to have more steel allocated to them, but steel producers point out that up to now not a single legitimate consuming plant has had to shut down for want of steel. No one looks for other than near-capacity operations in the near future, but this does not preclude a gradual return to more normal buying conditions. Shipments to automobile manufacturers and parts makers, aside from those of steel for national defense contracts, continue to be the heaviest to any one class of consumers.—W.C.H.



At least fifty million car-sales have started with a *swift, sure* BENDIX START!

WHEN the salesman steps into one of your cars with a prospective buyer and pushes the starter-switch that's an important moment. At least fifty million times that's been the beginning of a sale.

Doesn't that seem like a sufficiently sound reason for genuine Bendix Drive to continue in your service as a trusted, abundantly-proved part of the cars you build or sell?

No other integral automotive unit that we know of has ever built so impressive a record of satisfying, unfailing performance.

ECLIPSE MACHINE DIVISION
OF BENDIX AVIATION CORPORATION
ELMIRA, NEW YORK

BENDIX DRIVE

Clayton Farris Heads National Truck Show

Clayton Farris, president of the Trucktor Corp., Newark, N. J., has been elected president of the National Motor Truck Show, Inc. He succeeds J. F. Winchester who served as president of the corporation for the past seven years.

The following were elected vice-presidents for a term of one year: John F. Creamer, Wheels, Inc.; George Kuhlman, Heil Co.; Harry E. Slater, Thornton Tandem Co., and Elbert E. Husted, Titeflex Metal Hose Co. S. E. Oplinger of the Steel Products Co., Inc., was elected secretary-treasurer.

Definite plans are being completed for the 1941 show.

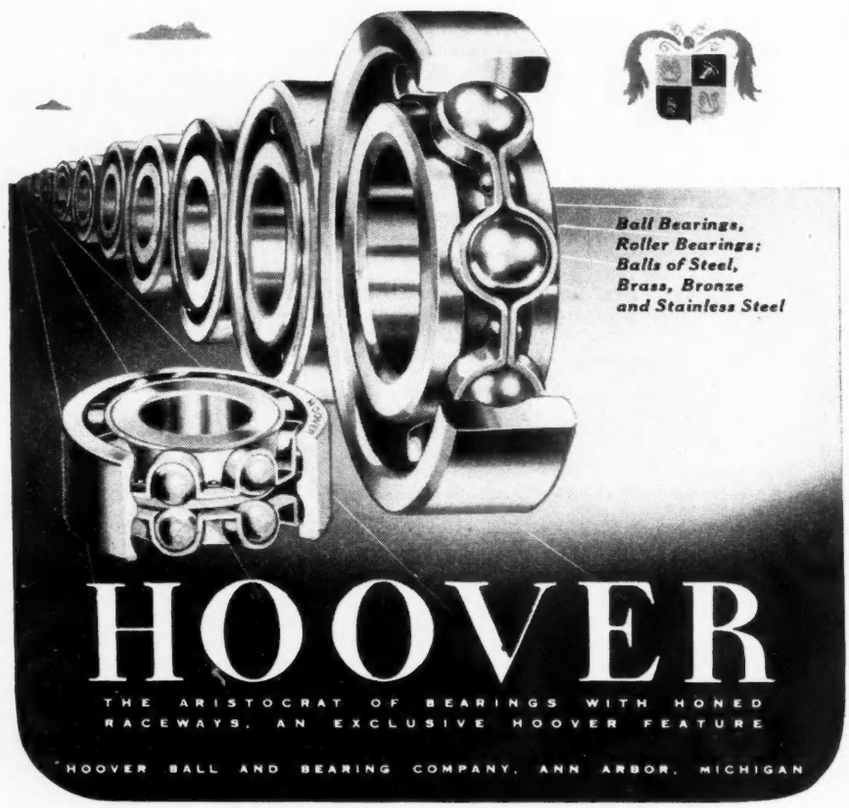
Wolf's Head Co.

Officers of the Wolverine-Empire Refining Co., Oil City, have authorized the change in the name of that organization to Wolf's Head Oil Refining Co. in order to conform to the trade name of its products—Wolf's Head. The company was founded in 1879 under the name Empire Oil Works and in 1929 was consolidated with the Wolverine Lubricants Co.

42 Million Bearings

CAN'T BE WRONG!

Could there be any more emphatic criterion of quality than the fact that over 400 leading firms in the Automotive, Machine Tool, Electrical and Industrial fields have used 42 million Hoover Bearings during the past twelve years? In your search for finer bearings shouldn't such a record merit investigation?



Ball Bearings, Roller Bearings; Balls of Steel, Brass, Bronze and Stainless Steel

HOOVER

THE ARISTOCRAT OF BEARINGS WITH HONED RACEWAYS, AN EXCLUSIVE HOOVER FEATURE

HOOVER BALL AND BEARING COMPANY, ANN ARBOR, MICHIGAN

CENSORED—

***An exclusive feature prepared by the London correspondent of* AUTOMOTIVE INDUSTRIES, M. W. Bourdon.**

Particulars have been released for a new Rolls-Bentley car that was to have been exhibited at the cancelled London car show of 1939, but it will not be put into production until after the war. One version has 120 m.p.h. within its capabilities; another, for five-passenger bodywork, is capable of 100 m.p.h., it is claimed. The engine, like that of the pre-war model, is a 4¼ liter six. For the first time, a Bentley independent front suspension is used, and rear springs vary automatically in stiffness with the load imposed upon them.

* * *

As a result of representations by operators' associations, Chambers of Commerce and many other interests directly affected by the serious shortage and increasing difficulty of securing replacement parts for trucks, buses and cars, the Ministry of Supply has agreed to facilitate their production by truck manufacturers and will itself be responsible for the placing of orders and the allocation of materials for parts. This will mean that replacements for trucks on national service of every kind, including food transport, will be on the same footing, in effect, as munitions of war.

* * *

Truck operators' organizations express approval of the new scheme whereby, to accelerate the transport of materials and products on Government account, the Ministry of Transport will itself operate the needed vehicles, hiring them from owners, the latter providing drivers and attending to maintenance. "As a hauler himself," says the British Road Federation, "the Minister of Transport will soon realize the difficulties with which road transport has to contend, and will be able to talk from experience to the Minister of Supply about replacements, new vehicles and personnel. He will also find that the roads, particularly in the region of docks, are grievously inadequate for the purpose for which he himself will be using them."

* * *

In connection with the new scheme just mentioned, a road transport division is being formed by the Minister of Transport, staffed by experts from the haulage industry, and as far as possible the vehicles operated will carry all Government bulk traffic. In some cases the division will

From Britain

compete with haulers, for it will attempt to secure "return loads" from industrial concerns when and where vehicles would otherwise be run in an empty or partly loaded state.

* * *

The partners of a firm of motor haulage contractors have had to pay fines totaling £728 for using flushing oil as a fuel, thereby avoiding payment of the tax on fuel oil for some thousands of gallons.

* * *

Truck operators in the north of England are dispersing their fleets each night to pooled garages in order to minimize air raid risks. Each firm has a small number of its trucks in each of the pool garages, so that if a garage is bombed out, each firm will lose only a small part of its fleet.

* * *

For many months past English dealers have been buying all the used trucks they could get hold of in Northern Ireland, offering big prices, and that province has had its road transport system seriously depleted in consequence. The Northern Ireland government has now put a stop to this by imposing a ban upon the export of motor vehicles of all kinds, except by permit.

* * *

During a discussion on post-war transport, the chairman of the Yorkshire Transport Society, who is an official of the London and North-Eastern Railway, suggested that there would be a demand after the war for a truck capable of being operated on either road or rail, and he cited the passenger coaches now in use on the London, Midland and Scottish Railway system, which can be switched easily from rail to road, and vice versa, by means of a wheel-change arrangement.

* * *

A serious shortage of motor vehicles of all kinds after the war is forecast by a prominent member of the industry, and there is widespread agreement with his contention that, with so many manufacturers now wholly occupied on war work other than vehicle production, a "real scramble" for cars, trucks and buses is likely for many months after the end of the war, even though prices will probably be from 40 to 70 per cent higher than in 1939.

* * *

A sidelight was thrown on the value of gasoline, owing to rationing, in a for sale advertisement of a used car in a provincial newspaper; it read, "1934—8 hp. saloon; taxed; full tank . . ."

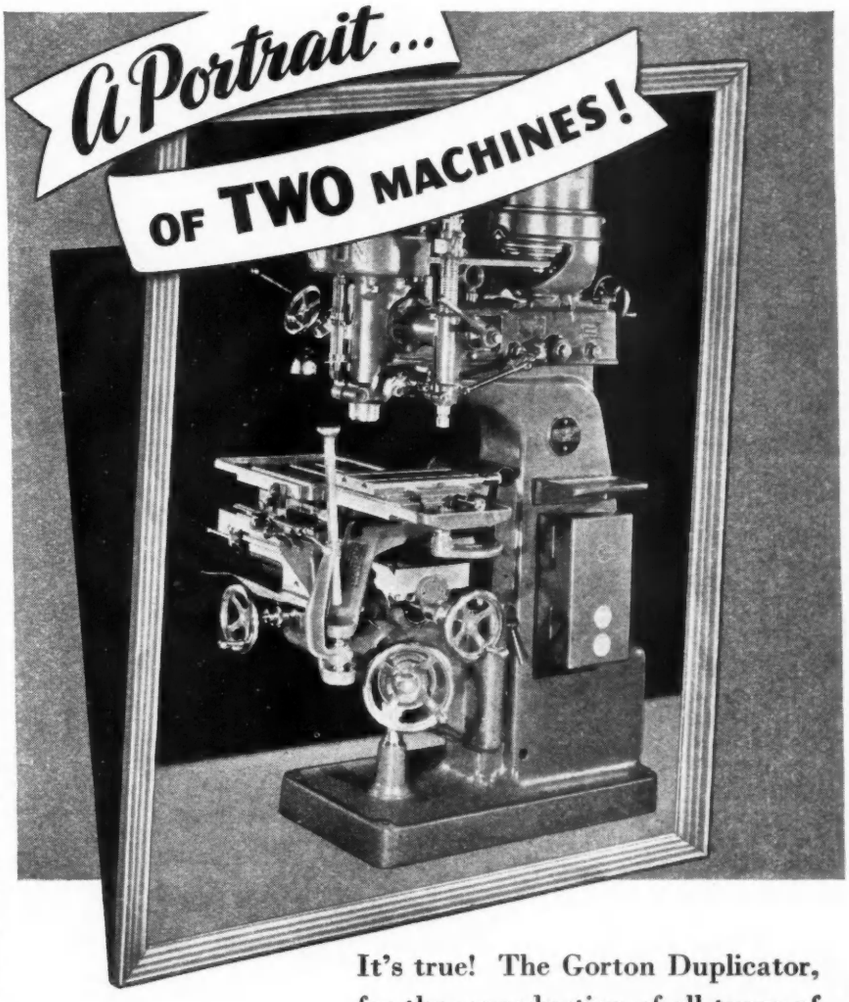
Plymouth Motor Fair

Transporting the Plymouth motor fair, a large industrial road show, a fleet of Dodge trucks brilliantly finished in a streamlined motif of red, white and blue is touring the southern states. Comprising the fleet are eight Dodge cab-over-engine 1½-ton tractors, each hauling a streamlined trailer.

One of the large trailers is divided into three sections and is outfitted completely as a motion picture projection booth, field office and repair shop. Another trailer carries two tents and equipment for staging the fair. In the third trailer is carried the power and light plant for the entire exhibit. Another trailer carries 1000 steel folding chairs to seat the motion picture audience. Feature displays are transported by the remaining trailers.

James E. McEvoy

James E. McEvoy, former general attorney for the General Motors Corp., died Feb. 12 at Detroit after a short illness. He was 66 years old. McEvoy joined the GM legal dept. in 1920 and later served as director of the patent and real estate sections until his resignation in April, 1940.



It's true! The Gorton Duplicator, for the reproduction of all types of dies and molds, is in reality two machines. The removal of the duplicator table—a moment's work—converts the Duplicator into a high speed vertical milling machine for the tool room or for light production work.

For full information write today for Bulletin 1319-B.

GORTON

GEORGE GORTON MACHINE CO.

1324 RACINE STREET, RACINE, WISCONSIN, U. S. A.

OPM Clarifies Priority and Purchase Systems

Designed to facilitate the issuance and application of preference ratings, OPM Director of Priorities E. R. Stettinius, Jr., has issued a bulletin covering the entire priorities system. The arrangement clarifies the relationship between the operations of the Army and Navy Munitions Board, concerned primarily with military needs, and the wider field of general industrial and civilian needs, which are administered by the Priorities Division.

Henceforth, the Priorities Division will divide administration of the system along practical lines, supplementing its own organization by the available facilities of the two armed services. The Army and Navy Munitions Board, in addition to determining priority ratings on the critical list, as in the past, may by agreement expand the list as the need arises and will also handle the extension of priority ratings down to the first contractor for critical items.

The Priorities Division has authority over priority ratings for all raw materials, for the extensions of ratings below the first subcontractor, over items not on the critical list, over the general field of civilian and commercial needs and over application of the formula to specific cases.

While expressing the hope the affected contractors will cooperate, thus continuing the voluntary system, Mr. Stettinius pointed out that the priority certificates, bearing reference to statutory authority, are mandatory in the sense that they may be enforced.

He added, however, that the Priorities Division will continue its efforts to avoid imposition of mandatory enforcement steps as much as possible.

Meanwhile the OPM has vested greater authority in Director of Purchases Donald M. Nelson under what it called improved methods of handling purchases and a clarification of its working arrangements with the War and Navy Departments.

Army and Navy Responsibility

Under the new plan the Army and Navy will continue the initiation and execution of contracts and will have final responsibility for product specification and for the fixing of delivery dates on needed items, but Mr. Nelson will review certain procurement methods, policies and specifications and will advise and make recommendations on such highly technical items "as will facilitate efficient procurement."

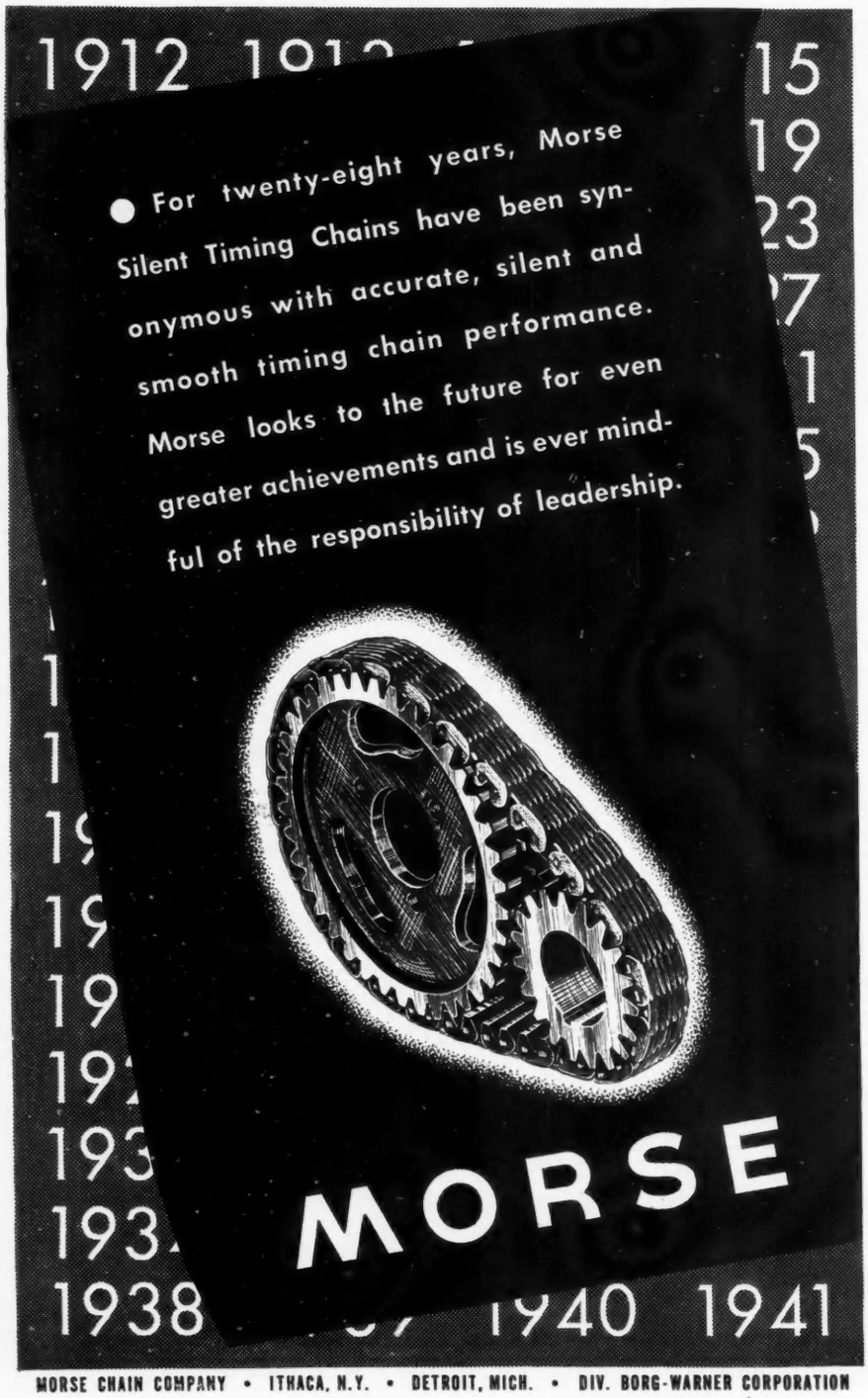
Other important proposals for purchases, or those involving unusual procurement problems, or likely to leave substantial impacts on the market, will be submitted by the War or Navy Department to Mr. Nelson at his request. Also, all contracts for $500,000 or more will be submitted to him for clearance before actual awards are made.

Under the terms of the new working arrangement, the provisions of which suggested that there has been confusion in government purchasing policies, the War and Navy Departments will continue to furnish Mr. Nelson with information on items to be acquired together with delivery schedule and specifications. Mr. Nelson's division hereafter will constitute that part of the OPM which will coordinate the placing of major defense orders and advise the established defense agencies on procurement and planning aspects.

Carlton Higbie Heads McAleer Mfg. Company

Carlton M. Higbie and Bradley Higbie have been elected president and treasurer, respectively, of the McAleer Mfg. Co., Detroit manufacturers of automobile polishes, rubbing compounds and allied chemical products. Both have been inactively associated with the firm for some time and now are assuming active management.

Other members elected to the board of directors are Carl Kennedy, vice-president; Ernest Hummitch, secretary; and Fred Weihe, production manager. Arthur Neubauer continues as manager of the automotive jobber division.



LABOR STRIFE

(*Continued from page* 262)

campaign ever undertaken in the automobile industry." Later in a speech at Windsor, Ont., Murray said he saw little likelihood for a joining of the AFL and CIO in the near future.

Twenty-two of the 23 Ford workers whose reinstatement was ordered by the NLRB and upheld in the U. S. Supreme Court on Feb. 10 were present at the Murray rally. Ten of the men fired for union activity in 1937 reported for work Feb. 17 at the Ford Rouge plant, while the other 12 had been re-employed for some time. The 23rd worker had died. The Ford Motor Co. also posted notices Feb. 19 at the Rouge and Highland Park plants, in compliance with the NLRB order, stating that the company would not interfere with employes' right to organize for collective bargaining. NLRB regulations require the notices to remain posted 60 days.

A straw vote taken in the Ford Lincoln plant by the CIO revealed that 1577 wanted the UAW-CIO as sole bargaining agent while 126 voted against it. The union has requested an NLRB election in the Lincoln plant.

Another NLRB order announced Feb. 21 required the Ford Motor Co. to reinstate 142 employes at its Richmond, Cal., plant and to award them back pay during the period of their allegedly discriminatory discharge. This was the eighth NLRB order issued against Ford. Appeals are pending in the courts on similar orders issued at Dallas, Tex.; Longbeach, Cal., and Buffalo, while board orders also have been issued in conjunction with complaints at Somerville, Mass., St. Louis and Kansas City, Mo. In the Richmond case, the NLRB charged that after a plant shutdown in 1937, only 700 of the 1343 workers were rehired, the company discriminating against those who had been active in the UAW-CIO.

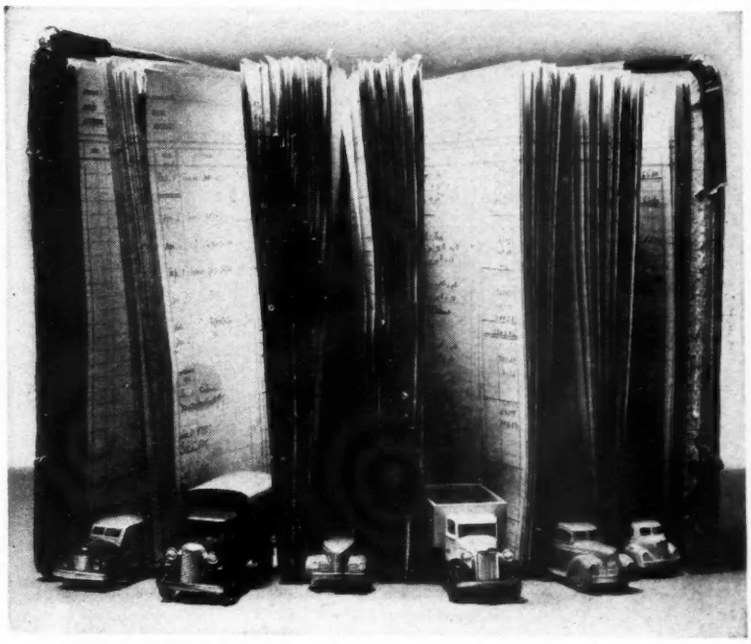
Thomas Broadcasts Appeal to Workers

UAW-CIO President Thomas broadcast a radio appeal Feb. 24 to workers at the Fisher Body No. 1 Plant in Flint to remain at work after 82 men in the trim department were dismissed as disciplinary action for an unauthorized stoppage of work Feb. 12, in violation of the General Motors contract. Thomas said that grievance procedure should be used to settle the dispute, which was provoked when a worker was given a disciplinary layoff for violation of a company safety rule. Dismissal of 23 participants in a similar wildcat strike at the Fisher Body Baltimore plant was upheld recently by Dr. Geo. W. Taylor, umpire under the GM-UAW-CIO contract.

Employes of Hudson Motor Car Co. voted down a strike proposal after five shop stewards were fired for participating in beating up a tool room foreman. Officers of the UAW-CIO publicly apologized to the foreman and severely criticized the 125 workers who took part in the affair for their mob tactics. The punishment of the five shop stewards later was mitigated to layoffs of four to six months.

National defense officials were hopeful that a five-week strike of 7800 members of the UAW-CIO at the Allis-Chalmers Mfg. Co. in Milwaukee would be settled by submission of minimum demands by the union. The strike called Jan. 22 held up $40,000,000 in defense orders. A compromise agreement was drafted Feb. 15 in the office of the OPM in Washington, providing for an impartial referee to arbitrate disputes, but the Allis-Chalmers workers refused to ratify it because it did not include a closed shop.

Strikes also kept shut three plants of the International Harvester Co.—the Chicago tractor works and plants at Rock Falls, Ill., and Richmond, Ind., where the FEWOC is demanding higher wages for 7000 employes. A clash between picketing strikers and police occurred Feb. 18 at Richmond. In an order issued Feb. 8, the NLRB ordered International Harvester to stop interfering with unionization of its workers and to disestablish allegedly company-dominated unions at six plants, including the Chicago tractor plant and the plant at Rock Falls.



it's a matter of RECORD

Maintenance records of fleet operators show that tires give better performance when the tire valves are sealed with air-tight valve caps. Greater mileage is obtained under all operating conditions with less service work and a minimum of roadside delays.

The road dirt, muck and slush encountered during normal operation is detrimental to your carburetor, bearings, brakes and any unprotected part. It is therefore not to be wondered at that this same dirt can be destructive to tire valves—and no valve can escape these elements even in the most ordinary service.

The use of a seal at the valve mouth is the only way to keep road dirt out of tire valves . . . the only positive assurance that the valves in your tires can be kept air-tight. There is no substitute for the air-tight tire valve cap.

Here's an Inside View of an Air-Tight Tire Valve Cap

1. *Valve Cap body or shell.*
2. *Brass Swivel Plate allows Cap Shell to turn independently of rubber washer as Cap is applied. This assures proper seating of washer and prevents distortion.*
3. *Brass Dome-shaped Plate provides an* indestructible *chamber for safe clearance of valve core pin.*
4. *Molded Rubber Washer seals valve mouth when Cap is screwed on firmly by hand; while rubber between brass plates 2 and 3 provides spring action to* maintain *positive seal.*

Schrader TIRE VALVE CAPS

REG. U.S. PAT. OFF.

GUARANTEED AIR-TIGHT UP TO 250 LBS. PRESSURE

A. SCHRADER'S SON Division of Scovill Manufacturing Company, Incorporated BROOKLYN, N. Y

Detroit and Cleveland Plants To Make Wright Engine Parts

Five Companies Get Subcontracts; Production of 1650 Hp. Motors Scheduled to Start in September at Ohio Factory

Three Detroit companies and two in Cleveland have received contracts from the Defense Plant Corp. to expand their manufacturing facilities to turn out parts for aircraft engines in conjunction with the new $57,000,000 plant which Wright Aeronautical Corp. is constructing at Lockland, Ohio, near Cincinnati. These firms have received subcontracts from Wright to furnish parts for the Wright Cyclone 14-cylinder 1650-hp. engines, which will begin coming off the production line at Lockland in September. Eventual production will be at the rate of 1000 engines per month by April, 1942.

Graham-Paige Motors Corp. already has received a defense loan of $1,803,280 to retool its Dearborn plant for the manufacture of connecting rods for Wright. Machinery will be installed this month and deliveries are expected to begin in June. The company will employ about 600 men on the order, which is understood to be nearly $10,000,000.

Hudson Motor Car Co. has been granted a loan of $939,313 for machinery and equipment to make piston and rocker arms in its aircraft division for Wright. N. A. Woodworth Co. in suburban Ferndale has received a $738,944 loan to build and equip a plant to manufacture Wright engine parts.

The government will furnish the Eaton Mfg. Co. at Cleveland with $854,335 for building and equipping an addition to the axle plant where propeller shafts will be turned out for Wright engines. Production is due to start in May. An additional $400,000 will be furnished Eaton to manufacture three other engine parts for Wright.

The Ohio Crankshaft Co. previously received a Defense Plant loan of $3,968,130 for construction of a new plant in Cleveland for making crankshafts for Wright. Otis Elevator Co. earlier had received an $8,500,000 subcontract from Wright for crankcases.

Construction work is being rushed on the Wright plant at Lockland and the main section is due for completion in June.

AEA Officers

Officers of the Automotive Electric Association for 1941 are as follows: Frank B. Willis, Bendix Products Division, president; J. A. Shank, Electric Auto-Lite Co., vice-president and chairman of the manufacturing division; E. A. Wildermuth, of New York, vice-president and chairman of the distribution division; H. E. Josselyn, King-Seeley Corp., secretary-treasurer; S. H. Fulton, assistant secretary and legal counsel. S. W. Potter, who has been acting executive secretary since last fall, has been named executive secretary in charge of the association headquarters at Detroit.

PLASTIC MOLDED
AUTOMOTIVE PARTS
JUST TO
REMIND YOU—
that we have the largest, most modern and best equipped Custom Molding Plant in the Middle West, for supplying Plastic Molded Automotive Parts by the Compression and Injection Processes.
We invite your inquiries.
CHICAGO MOLDED PRODUCTS CORP.
1039 N. KOLMAR AVE. CHICAGO, ILLINOIS

ADVERTISING

Schipper Associates, of Detroit, has been named advertising agency for the Stinson Aircraft Division of Vultee Aircraft, Inc.

J. E. Jury, formerly of the technical service department of the Shell Oil Co. in St. Louis, has become associated with C. G. Schelly as technical advertising counsellors. This organization is called the Business Collaborators and is located in the Shell Building, St. Louis, Mo.

Art Kanaske, who resigned recently as sales manager of Lube-X system, Inc., has joined Behel and Waldie, Chicago advertising agency.

Decline in Number of Taxicabs During 1940

The taxicab, for a quarter century a feature of American life in cities, both large and small, maintained its position in 1940 as one of the major urban transportation factors.

In the major cities of the United States and Canada competition in the taxicab business during 1940 was not as severe as in previous years, largely because of a substantial reduction of cabs in service.

In 91 cities, all over 100,000 population and comprising the largest group as listed by the United States 1940 census, there were in operation a total of 32,384 taxicabs, giving service to a total population of 37,736,608. This figure compares with 37,420 cabs in the same 91 cities in 1939, a reduction of 5036. In these 91 cities, population per taxicab is 1165. But if New York and Chicago are deducted from the total, the ratio is one cab for each 1500 population. In 391 various cities, large and small, comprising a population of 48,124,120, there were in operation 37,841 cabs, an average ratio of one cab per 1270 population. In these 391 cities there were 5191 less cabs in operation than in the previous year.

There are now about 65,000 taxicabs in operation throughout the United States carrying about 780 million passengers per year.

The average ratio of taxicabs in major cities figures out one cab per 635 population in New York, one per 1300 in Chicago, one per 3290 in Philadelphia, one per 504 in Boston, one per 854 in Baltimore, one per 1145 in Cleveland, one per 2661 in Pittsburgh, one per 2350 in Milwaukee, one per 2362 in Detroit, one per 3440 in Los Angeles, one per 2318 in St. Louis.

Taxes of Corporations Reduce 1940 Earnings

Increased taxes for 1940 absorbed much of the gain in profits of leading companies, and in some cases caused net incomes to decline, a study by the National Industrial Conference Board of 1940 financial statements reveals.

For a group of 120 industrial companies, Federal income and excess-profits taxes were found to have risen 141 per cent for the year, reducing the 37 per cent gain in profits before deduction for taxes to only 14 per cent after taxes. Six machinery companies in this group had increases in taxes which amounted to more than 300 per cent and lowered their income from a "net before taxes" gain of 100 per cent to a "net after taxes" gain of 47 per cent. Earnings of six chemical producers in the group showed a decline of 5 per cent after taxes. This was owing to the fact that while earnings rose 28 per cent, Federal taxes increased more than 200 per cent.

Among companies paying heavily through taxation for increased business were those in the automotive industry. These showed an average gain of only 6 per cent in net income as compared with a 179 per cent rise in tax reserves. Steel was less affected. Tax reserves of 11 steel companies increased 127 per cent, but were equal to only 23 per cent of their income before taxes, as compared with 42 per cent of earnings before taxes in the machinery industry, 39 per cent in the automobile, and 36 per cent in the chemical industry.

Nash Introduces Slipstream Sedan

A newly styled two-door, six-passenger sedan has been introduced in the low price field by Nash Motors and will be offered in both the standard and deluxe Ambassador "600" series, and also in the Ambassador Six line. It is called the Slipstream Sedan and features an effective combination of streamlining with maximum headroom and visibility made possible by the "unitized" body construction.

SERVING THE TRANSPORTATION FIELD
CONTINENTAL MOTORS
Powerful as the Nation
AMERICA'S STANDARD
Dependable Continental Engines . . .
Always on the Job
For 40 years Continental Red Seal Engines have been put to work in the field of transportation. From the beginning, the dependability of Red Seal Power has never faltered. To the contrary, it has been strengthened through the years by added experience, by finer facilities — by more intensive effort, so its acknowledged leadership would always be maintained.
Today, Dependable Red Seal Power is in a better position than ever before, to serve the entire transportation field.
Continental Motors Corporation
MUSKEGON, MICHIGAN

Canadian Auto Industry Under One-Man Control

Modification of the ban placed on importation of U. S. made passenger cars into Canada was contained in an announcement Feb. 14 of the Canadian Finance Minister, J. L. Ilsley. For the quarter ending March 31, U. S. companies will be permitted to export to Canada passenger cars equal to 20 per cent of the average value of such exports in the same period of 1938, 1939 and 1940. Future quotas will be set by John H. Berry, newly appointed motor vehicle controller for Canada.

Berry's authority as controller extends to "wide powers to control and regulate the entire automotive industry." Licensing of manufacturers or distributors of trailers, tires, motor vehicles, parts and accessories come within his province. He also "may prohibit any person from making or dealing in motor vehicles, either entirely or to such an extent as he may see fit."

Modification of the import ban is expected to benefit the independent producers, such as Studebaker, Willys, Hudson, Nash, and Packard, which had not operated Canadian plants for some time. The possibility that these companies might reopen their Canadian assembly plants, thus putting a demand on machine tools and manpower that is vitally needed elsewhere in Dominion war industries, was seen as an important factor in the change of policy by the Canadian government. Furthermore, it at least has been hinted that tighter control may be exercised on the production of those U. S. companies who have continued to operate their plants in Canada.

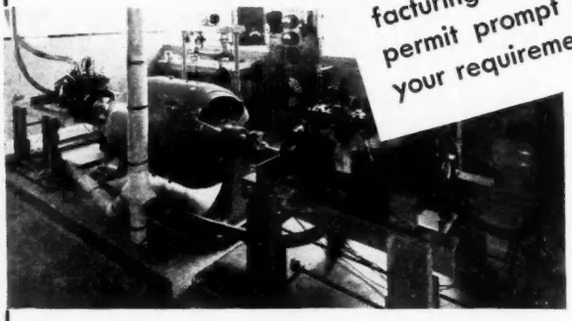
PREFERRED

BY TRUCK OPERATORS WHO BUY YOUR EQUIPMENT

The ever increasing number of truck operators standardizing on the Hoof Governor—and specifying "Hoof" when ordering new equipment is a best testimonial of a job well done.

Like your product, Hoof Key and Seal Type Governors have earned recognition through performance; attention to the small details that make a good piece of equipment even better; keeping ahead, not abreast of the times.

The well manned and unusually complete engineering facilities enable us to work out any governor problem in a minimum of time. Our ample manufacturing facilities, again enlarged, permit prompt delivery on any of your requirements.



One of the two Hoof Dynamometer and Testing Laboratories where every special calibrated governor is engine tested.

HOOF PRODUCTS CO., . . . 6543 S. Laramie Ave., CHICAGO, ILL.

Makers of the FAMOUS HOOF CANTILEVER GOVERNORS.

Offer Hydra-Matic Drive On All '41 Cadillac Cars

The Cadillac-engineered Hydra-Matic Drive, which eliminates the clutch pedal and gear shifting, has been made available on all series of 1941 Cadillacs. Listed as optional equipment, this automatic control heretofore had been installed on only a limited number of cars. It was described in the Dec. 15, 1940 issue of AUTOMOTIVE INDUSTRIES.

William W. Crawford

William W. Crawford, president and chairman of the board, Edward Valve Co., East Chicago, Ind., age 59 years, died Feb. 19 at Miami Beach, Fla. He was a former newspaper man with El Paso and Chicago newspapers and a former secretary and manager of the Chicago Automobile Club.

Price Fixing Order On Second Hand Tools

Pointing to hard and fast government regulation over industry where that course is considered necessary, the first formal order fixing maximum prices has been promulgated by the National Defense Advisory Commission. The order fixes prices on second-hand machine tools, and warning was given that the move will be extended to include other products where necessary to "protect the public interest and guard against profiteering."

As in new equipment, there has been a shortage of second-hand machine tools and claims have been made by the defense commission that advantage has been taken of the tight market to sell the old equipment at unduly high prices.

Recently the Priorities Division of OPM recommended that so far as possible second-hand tools be used by schools and similar institutions engaged in training workers.

The order fixing prices on second-hand machine tools became effective on March 1.

Alphonso S. Campbell

Alphonso S. Campbell, founder and board chairman of A. S. Campbell Co., Boston, died Feb. 19 while on a vacation cruise aboard the S.S. Brazil en route to South America. He founded the Campbell Co. in 1910 and was president until 1940. Mr. Campbell was 63 years of age and resided in Duxbury, Mass.

Plant Extensions and Factory Enlargements

The Pratt & Whitney Aircraft Division of United Aircraft Corporation has completed the last of four new factory buildings which have been added to its engine manufacturing facilities at East Hartford, Conn., within the past two years. The new addition has a floor area of nearly 400,000 sq. ft., bringing Pratt & Whitney's total factory floor space to approximately 1,600,000 sq. ft. Indicative of the size and swiftness of the expansion which the engine division has undergone is the fact that the new building is the same size as the entire Pratt & Whitney plant of two years ago. It is devoted solely to engine assembly facilities.

Buick Motor Division of General Motors will begin construction in Flint this month of a two-story storage garage capable of housing 1100 new cars awaiting shipment by truck or customer driveaway. The brick and steel structure will be 655 ft. by 352 ft. with a floor space of 450,000 sq. ft.

The American Rolling Mill Co. is to build a steel plant on the Ship Canal near Houston, Tex. Final assurance of its construction was given about the middle of last month when the Reconstruction Finance Corp. authorized a $12,000,000 loan. A Texas corporation, a wholly-owned Armco subsidiary, is being formed to build the plant and operations will be managed by the Sheffield Steel Corp., another Armco subsidiary. It is expected that the Texas plant will manufacture billets for shell forgings, structural steel, light plates for shipbuilding, wire, rods, oil field supplies, and other defense items.

General Electric X-Ray Corp., Chicago, a General Electric subsidiary, is planning a $500,000, 5-story addition to its X-ray manufacturing plant at 2012 West Jackson Blvd. The expansion will permit production of the recently developed 1,000,000-volt industrial X-ray apparatus used extensively by the Army and Navy for testing steel used in armaments.

National Lead Co. plans to spend $225,000 in construction of a barite plant in the Magnet Cove area of Hot Springs County, Ark., with a 13,000 volt transmission power line to be constructed by Arkansas Power & Light Co. Capacity will be 65 tons daily. Barite is used in processing glass, rubber and other materials, and in the production of steel. A new method of separating titanium ore by electric blowers will be used in the new plant.

Permo Products Corp., 6415 Ravenswood Avenue, Chicago, is another newcomer to the ranks of aviation manufacturers, with an alloy pivot point for instruments used in aircraft. It has made phonograph needles for years.

The Houde Engineering Corp., Buffalo, has put its new tool manufacturing shop into production. The additional 20,000 ft. of floor space will be used to produce tools and equipment for making shock absorbers and precision tools.

To accelerate output of tools for the aircraft and automobile industries, the Farnham Mfg. Co. of Buffalo, has stepped up operations to a capacity basis and has broken ground for a $20,000 addition to its factory.

George A. Parker

George A. Parker, one of the pioneers in air compressor design, succumbed to heart trouble on Feb. 12 at his home in Utica, N. Y., after a few days' illness. Mr. Parker, who was born Feb. 24, 1879, was affiliated with the Brunner Mfg. Co. for many years.

William Schacht

William Schacht, pioneer in the automobile business in Cincinnati and president of the LeBlond Schacht Truck Company until his retirement in 1937, died suddenly on Feb. 17 at his home in Cincinnati. Together with his brother, the late G. A. Schacht, he founded the automobile manufacturing business which dates back to the year 1900. Following the manufacture of pleasure vehicles, the G. A. Schacht Truck Company was founded and later the company became the LeBlond Schacht Truck Co., which in 1935 absorbed the Ahrens Fox Fire Engine Corp.

New!

A 24" Throat, Automatic Rivet-Setter For AIRCRAFT ASSEMBLIES . . .

ON DISPLAY
In Booth 114 at the Machine Tool Show in Detroit

HERE IT IS . . . the Chicago Rivet's New Model 140 . . . the first of a complete line of precision, heavy-duty, automatic riveters, specially tooled for high-speed, aircraft assemblies. Sets up to 2400 3/16" solid aluminum aircraft rivets per hour. *That's production!* Rugged construction and advanced design assure a perfect clinch with a single riveting blow.

Write for Chicago's New Aircraft Riveter Catalog, illustrating and describing Model 140 and other Chicago automatic bench and floor type units in detail. All are designed and tooled especially for aircraft production. All are equipped with SAFE, non-repeating type clutch. Remote electric foot button control available.

If your need is urgent, send blue prints or sample assembly for specific recommendations. Whatever your riveting problem, Chicago can solve it with the *right* machine and tooling.

Equipped with Automatic Rotary Type Hopper

Tubular and Split Rivets—Aircraft Rivets

Chicago RIVET & MACHINE CO.

1862 South 54th Ave. (Cicero P. O.) Chicago, Illinois

Automatic and Manual Rivet-Setters for 1 to 4 Rivets at a Stroke

Gold Medal Advertising Award to Detroit Man

For his distinguished services in the field of advertising, Henry T. Ewald, well-known Detroit advertising executive, has been named the winner of the 1940 gold medal award in the annual nation-wide advertising competition sponsored by *Advertising & Selling* magazine. A pioneer in that field, he founded the Detroit Aircraft Club 35 years ago and during the past two decades he has been extremely active in the work of the American Association of Advertising Agencies, acting as chairman of many of its committees as well as heading this organization as chairman of the board. He was one of the early members of the National Outdoor Advertising Bureau and now heads this organization as chairman of its board. He is a director of the Traffic Audit Bureau and also has served as a director of the Advertising Federation of America.

Born 55 years ago of parents of modest means, he quit school when 14 to work for the D. & C. Navigation Co., becoming its advertising manager a few years later.

Mr. Ewald is a co-founder and president of Detroit's oldest advertising agency, Campbell-Ewald Co., which celebrated its 30th anniversary last month. This event was recorded in the preceding issue of AUTOMOTIVE INDUSTRIES.

Henry T. Ewald

BUDA-LANOVA DIESELS

FOR

AUTOMOTIVE

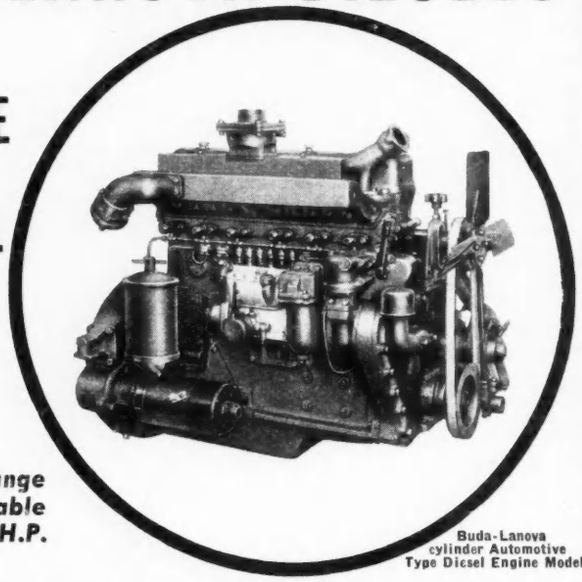
•

INDUSTRIAL

•

MARINE SERVICE

—A Complete Range of Sizes Available from 20 to 250 H.P.



Buda-Lanova cylinder Automotive Type Diesel Engine Model.

THE Buda Company is the pioneer of high speed Diesel Engines in the United States. BUDA-LANOVA *"Low-Pressure"* Diesels offer exclusive advantages in combustion that mean smoother, quieter operation, lighter weight, cleaner exhaust, and all-around dependability. These features are the result of Buda's *low pressure* combustion. Complete information and literature will be sent on request.

SIZES OF BUDA-LANOVA DIESELS

Model	Cylinders	Bore	Stroke	Displacement
4-DT-212	4	3 5/8"	5 1/8"	212 cu. in.
4-DT-226	4	3 3/4"	5 1/8"	226 cu. in.
6-DT-278	6	3 5/8"	4 1/2"	278 cu. in.
6-DT-294	6	3 5/8"	4 3/4"	293 cu. in.
6-DT-317	6	3 5/8"	5 1/8"	317 cu. in.
6-DT-389	6	3 7/8"	5 1/2"	389 cu. in.
6-DT-468	6	4 1/4"	5 1/2"	468 cu. in.
6-DH-691	6	4 3/4"	6 1/2"	691 cu. in.
6-DH-909	6	5 1/4"	7"	909 cu. in.
6-DH-1611	6	6 1/4"	8 3/4"	1611 cu. in.
6-DH-1742	6	6 1/2"	8 3/4"	1742 cu. in.
6-DH-1879	6	6 3/4"	8 3/4"	1879 cu. in.

THE BUDA CO., Harvey (Chicago Suburb) Illinois

Hudson Offers Station Wagon

New styling, exceptional roominess and many new refinements in interior fittings with utility features are combined in the 1941 Hudson Station Wagon. This body type is available with six or eight-cylinder powerplants of 102 hp. and 128 hp., respectively.

PUBLICATIONS

Norton Co. has issued a new folder on the use of **Norton cut-off wheels** on Delta equipment, with suggestions and recommendations for the best results in the use of abrasive cut-off saws and wheels.*

Meeting the Demand for Faster Production is the title of a new booklet published by Farrel-Birmingham Co., Inc. It points out the gains from plant rehabilitation and outlines the factors in machinery modernization for man hour conservation in production.*

DeVilbiss Co. has issued a new 48-page catalog on its 1941 line of automatic, portable and specialty **spray painting equipment.***

Brown Instrument Co.'s Catalog No. 9400 describes and illustrates the **Brown New-Matic Remote Transmission** for temperature, pressure, flow and liquid level recorders.*

A new catalog on **Liquid Level Gauges** has just been published by The Bristol Co. Float, pressure-bulb, pressure, air-bubbler, counterpoise and differential pressure type water and liquid level gauges are described for all types of applications.*

Roxalin Flexible Lacquer Co. has issued a four-page bulletin on **Rincontrol,** its new wrinkle finish. The bulletin includes a sample panel and illustrates and describes eight special Rincontrol features.*

Cummins Dependable Diesels is the title of a new booklet by the Cummins Engine Co. It illustrates and describes engines AA-600, HB-600 and HBS-600. The booklet also includes detailed specifications, and torque and fuel consumption charts.

C. F. Pease Co. has issued an illustrated folder describing its **22-16** combination, the Model 22 blueprinting machine with the Model 16 washer and dryer.*

F. J. Littell Machine Co. has a circular,

Littell Products, which gives a brief summary in pictures and descriptive captions of a wide variety of products represented in the Littell line of equipment for punch press shops.*

High Speed Diesel Lubrication is the title of an illustrated booklet by Standard Oil Co. of N. J. which discusses exhaustively the lubrication problems presented by today's high speed diesels. **Essolube HD,** another booklet by Standard Oil Co. of N. J., gives a complete description of the properties of high stability, high viscosity index detergent type oil for heavy duty gasoline and diesel engines.*

Reliance Electric & Engineering Co.'s Bulletin 310 describes and illustrates its new **All-Electric Adjustable-Speed Drive** for alternating current circuits which makes available small units (one h.p and up) for speed control.*

Allegheny Ludlum Steel Corp. has issued a new "Blue Sheet" on the fabrication of **Allegheny Stainless Steels.** The booklet contains 11 technical articles on welding, drawing and blanking, machining, spinning, etc.*

The Liberty Planer & Mfg. Co. has issued catalog No. 152, which describes in detail the latest design **Liberty Planers** of the fast operating, heavy duty type, and also contains specifications and illustrations of details.*

Barber-Colman's data sheet No. 15 describes its No. 3 **Hobbing Machine** and data sheet No. 16 describes its No. 3 **Hob Sharpening Machine.***

American Nickeloid Co. has issued a small folder describing and illustrating its **pre-finished metals,** which are available in flat sheets, continuous coils and flat wire in various gauges and tempers and a wide range of sizes.*

Detroit Universal Duplicator Co. has a new booklet, **Low Cost Die and Mold Duplicating,** which shows various applications of the unit to turret lathes, planers, shapers, millers, die sinkers, etc.*

Book No. 1911, by Link-Belt Co., illustrates and describes the various uses of the **Link-Belt Roto-Louvre Dryer.***

Radiator Specialty Co. has issued a leaflet on **TiteSeal,** its gasket, joint-sealing and caulking compound, with specific uses, particularly in aircraft production, for the various densities in which this product is made.*

The Phosphor Bronze Smelting Co. has a new booklet giving complete technical data on its **Elephant Brand Phosphor Bronze,** and also the general properties of four standard alloys with recommendations for application. Specification data are given for standard and special rods and shapes, sheets and wire. Data on machineability and other technical information are also included.*

The Fulton Sylphon Co. offers a new 28-page data book on **Engine Thermostats.** All principal data are given in tabular form for convenient reference. Types shown and described include popular passenger car engine thermostats, as well as heavy-duty types for bus, truck, tractor, marine and aircraft engines.*

The Alexander Milburn Company has a special portfolio describing **Milburn gas and air regulators,** single and two-stage, ball seat type.*

A new catalog on modern **Liquid Level Gauges** has just been published by the Bristol Company. Float, pressure-bulb, pressure, air-bubbler, counterpoise and differential pressure type water and liquid level gauges are described for all types of application.*

The January issue of Grits and Grinds, published by Norton Co., contains an interesting article on care in handling **grinding wheels.***

1940 Retailers' Operating Cost Survey is the title of a booklet published by Dun & Bradstreet, Inc.*

* Obtainable through editorial department, AUTOMOTIVE INDUSTRIES. Address Chestnut and 56th Sts., Philadelphia. Please give date of issue in which literature was listed.

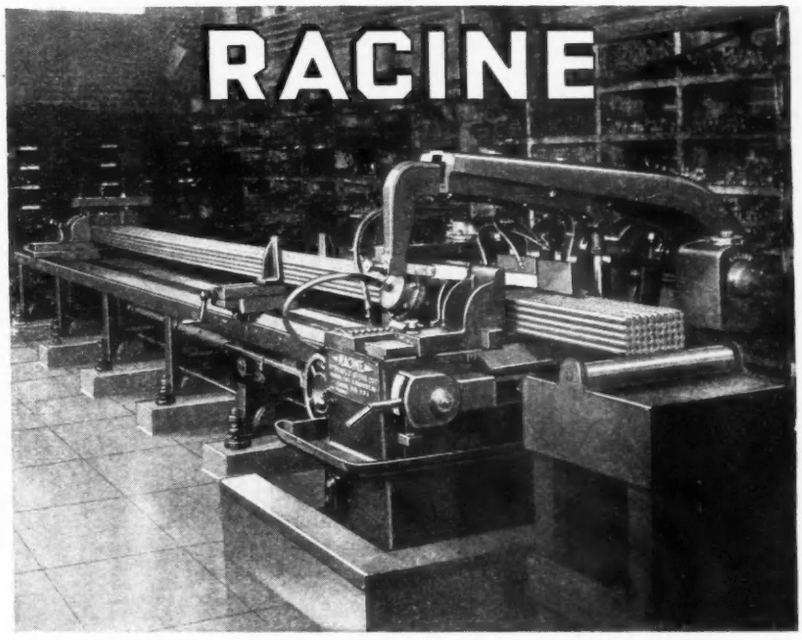
Caterpillar Tractor Co. Reports Gains in 1940

New records in sales, payroll and employment are reported by the Caterpillar Tractor Co., Peoria, Ill., for 1940. Foreign and domestic sales for the year amounting to $73,062,514 were approximately $10,000,000 more than for any previous year and were $14,629,593, approximately 25 per cent, more than those of 1939. Domestic sales in 1940 totaled $50,338,656.

The net profit amounted to $7,839,116 as compared with $6,004,890 for the preceding year. The 1940 payroll was $22,610,346 and in 1939 it amounted to $18,852,101. The number of employes on Dec. 31 was 12,907 as compared with 11,572 at the end of 1939.

Harry J. Copeland

Harry J. Copeland, president and general manager of the Copeland-Gibson Products Corp., died Feb. 11 at his home in Detroit at the age of 52. He formerly was associated with the Federal Motor Truck Co. and was purchasing agent for the Hudson Motor Car Co. until he formed his own concern for the manufacture of parts in 1930.



Fast production of Flannery Bolt Company, Bridgeville, Pennsylvania. A RACINE Heavy Duty Machine cutting fifty 1" bars at once, to uniform lengths in fully automatic cycle.

RACINE SAWS

MODERN—In Speed

MODERN—In Hydraulic Simplicity

MODERN—In Accuracy—Economy

In arsenals, in battleships and cruisers, in steel mills, in aircraft plants, in all the heavy industries, RACINE Metal Cutting Machines are used for cutting bars, billets, structural steel shapes, die blocks, etc. Hydraulic feeds and control give smooth, quiet performance and the correct speeds for cutting all types of steel. RACINE Heavy Duty Machines are used to get the fastest sustained production with the longest blade life, wherever metal cutting jobs are tough.

RACINE Heavy Duty Hydraulic Models are available in sizes 10x10 to 14x20. Other RACINE saws in Hydraulic Feed, Screw Feed, and Gravity Feed Types—6x6 to 9x9—are adaptable to every purpose from general shop work to full automatic operation.

Write for details. Let RACINE engineer your metal cutting problems.

RACINE TOOL & MACHINE CO.

1005 Carlisle Avenue, RACINE, WIS.

BOOKS . . . .

HANDBOOK OF CHEMISTRY AND PHYSICS. *Twenty-fourth edition. Published by the Chemical Rubber Company, Cleveland, Ohio.*

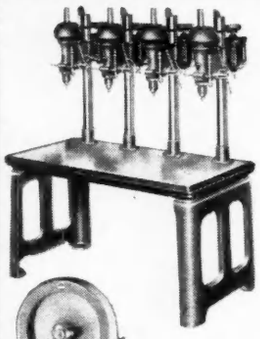
In the twenty-fourth edition of this well-known handbook a number of changes and additions have been made. The compilation of physical constants of organic compounds has been changed from the paragraph form to the tabular form for greater convenience. More than 300 new organic compounds have been added, bringing the total listed above 9000. A new feature is a table of physical constants of industrial organic compounds, prepared in collaboration with manufacturers of chemicals. The table on commercial plastics has been revised thoroughly. A table on induced radioactivities has been added, and the table of gravimetric factors and their logarithms has been brought up to date to correspond with recent changes in atomic weights. The book contains more than 2500 pages and is a rich source of basic chemical and physical data.

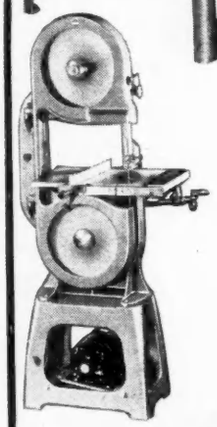
SALES ENGINEERING, *by Bernard Lester. Published by John Wiley & Sons, Inc., New York.*

We hear a good deal of sales engineering in the automotive field, and we can therefore well believe the author when he says that it is a new and growing art which each year draws increased numbers of technical graduates. He defines sales engineering as the art of selling equipment and services which require engineering skill in their selection, application and use. One might, of course, possess engineering skill and yet not know how to properly apply it in effecting sales of equipment and services, and that is where this book is intended to help. The technique of selling technical products is described in detail, and many examples of procedure under specific conditions are given by way of illustration. The book is written in very readable language and should be of help particularly to the young graduate wishing to enter upon a career of sales engineering.

SMASH THIS Barrier

With DURO TOOLS





If your shop suffers from a shortage of precision-built machines for fabrication of hundreds of small parts needed in the National Defense Program—

If production barriers are cropping up in your plant due to lack of enough machinery—

If your big machines are tied up because they have to handle both the large and small jobs—

Then you too can smash through these barriers. Duro Tools, at a very low cost, will help restore the stream of materials to flow smoothly and continuously for you as they do for many other manufacturers.

There are many places in your shop where Duro Tools will take the place of your big machines to speed up the work going over your production line.

We can't tell you the whole story here but we invite you to visit BOOTH 120 during the A.S.T.E. Exposition in Detroit—March 25 to 29. We'll explain in detail how Duro Tools will fit into your plant.

DURO METAL PRODUCTS CO.
DEPT. AI-3
2649 N. KILDARE AVE., CHICAGO, ILL.

MEN

(*Continued from page* 260)

mental sales; **B. E. Silver,** sales representative of the mechanical division in Indiana, is transferred to government sales in Washington, D. C., and **W. E. Nees** appointed to his post, with headquarters in Indianapolis; **Ralph Barcus** of the Akron district staff succeeds Nees in the West Virginia territory, with headquarters in Charleston.

Ashland Henderson, chemical engineer and former Frigidaire metallurgist has joined the technical staff of Battelle Memorial Institute, Columbus, Ohio.

Arthur J. Brandt, president of A. J. Brandt, Inc., Detroit industrial engineers, has been appointed head of the manufacturing division of the aircraft section of the Office of Production Management. **E. S. Chapman,** loaned to the OPM by the Chrysler Corp., where he was vice-president of the Plymouth Division, has been designated head of the small arms and ammunition division of the Ordnance Section.

D. R. Lashmet, formerly engaged in sales promotion of parts and accessories for Chevrolet, has been appointed parts sales manager of the Pontiac Motor Division of GM. **J. H. Otis,** former parts and accessories sales manager, continues as accessories sales manager. **E. M. Taber** has been appointed assistant service manager in charge of the East.

A. M. Sanders has resigned as Los Angeles zone manager for Pontiac to become a Pontiac dealer at San Diego, Calif.

Cardox Corp., Chicago, announces five promotions of executives in its organization as follows: **J. H. Bell** to executive vice-president, Eric Geertz to vice-president in charge of the fire division, Harry Ensminger to general sales manager of the fire division, Lawrence E. Lawson to vice-president of the carbon dioxide gas division, and Dr. C. A. Getz to director of research.

Thomas J. Litle, Jr., formerly chief engineering executive of the Easy Washing Machine Co., has been appointed director of engineering for the Bendix Home Appliances, Inc. In 1926 he was president of the Society of Automotive Engineers. Formerly he held the positions of director of research, Cadillac Motor Car Co., and chief engineer of the Copeland Refrigeration Co.

Induction-Heating for Hardening and Tempering

Although heating ferrous parts for heat-treating purposes by high-frequency induction has been in use for a number of years, it is making progress only slowly, said Edmund Blasko of Ford Motor Company in a paper read before the American Society for Metals. One of the reasons probably is the over-emphasis of surface heating, which calls for a more expensive installation than "all-through" heating, as it is necessary to operate at higher frequencies, and larger and more complicated motor-generator or transformer equipment is required. For surface heating 2000-cycle current is most suitable, while for "all-through" heating current at 480 to 960 cycles per second is used.

Ford Motor Company made its first attempt to heat-treat with high-frequency current as far back as 1923, the part to be treated being the Lincoln engine valve guide. However, it was found that the part heated very irregularly, the thinner sections becoming over-heated before the heavier sections reached the quenching temperature. This and other trouble led to the conclusion that the converter used was not suited for heat-treating purposes, and thereafter it was used for experimental melting.

A number of years ago the subject was taken up anew, and now several parts are being heat-treated by electric induction on a production basis, the current source being a 50-kw., 960-cycle, 240-volt generator. Round, water-cooled copper tubing of ¼ in. outside diameter is used for the coils, and heating periods are controlled automatically.

A 1⅛-in. drive shaft required hardening of its center and end bearings, as well as of the splined end. Surface hardening did not produce satisfactory core strength, so it was decided to heat the shafts through their whole cross section and select a steel which would give the necessary core strength. A plain carbon steel of 0.35-0.40 carbon was chosen. When these shafts are induction-heated through their whole cross section and then quenched in a caustic solution, the hardness of the surface ranges between 54 and 58 Rockwell C, and that at the center of the core between 36 and 40 Rockwell C. The success of this experiment led to the adoption of induction heating for a number of other parts, especially parts that had to be hardened at particular sections, because in such cases the possible savings on heating costs were most important.

Induction heating is most frequently employed for surface heating which is followed immediately by quenching, generally without removing the part from the heating fixture. Sometimes it is necessary to confine the heating effect to the surface in order to prevent warping, while in other cases it is done to prevent too deep penetration of the hardening effect and an adverse influence on the physical properties.

When a part is to be heated to a shallow depth only, it must be done very rapidly. This requires a large input of electrical energy of high frequency, which, in turn, makes necessary the installation of a large motor generator or converter set. If, on the contrary, the part can be heated all through, it can be done at a lower rate, and a lower input at lower frequency can be used.

When a part is surface-heated it cools rapidly, which makes it necessary to combine the quenching device with the heating equipment, whereas if it is heated all through it can be removed from the fixture and quenched in a separate tank. While the part is being quenched the heating fixture can be used for another piece, and as quenching takes from five to twenty times as long as heating, this is of some importance. The shorter the heating time the more accurate must be the time-cycle control of the heating

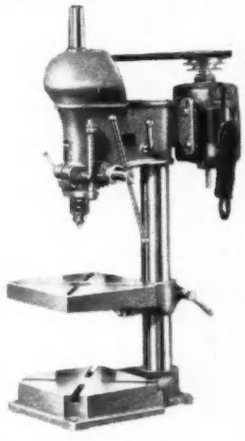
GET DURO Tools NOW

FOR FACTORY-SHOP-TOOL ROOM

Now is the time to use Duro Power Tools. They are built to precision limits and, more important, they lend themselves to many jobs where speed and adaptability are essential.

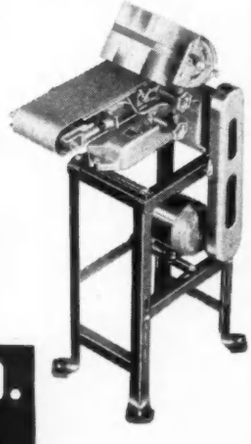
We recommend—

Single and multiple spindle Drill Presses to perform various drilling and tapping operations with speed and accuracy. Their massive construction guarantees continuous and trouble free performance.



The Belt Sander for fast removal of burrs from all materials or quick sanding and polishing hundreds of parts.

The Band Saws for cutting, tubing, extruded shapes, bar stocks, metal sheets, gates on castings, plastics, brake linings, hard rubber, slate, fibre and many other materials economically and efficiently.



Duro Heavy Duty Grinders for tool and die work. Their surplus power, high speed and precision performance make them important tools in today's frantic effort to produce materials.

The tools described here do not comprise the complete Duro Line. We again invite you to visit BOOTH 120 during the A.S.T.E. Exposition in Detroit, March 25-29. We'll be glad to discuss any problems you may have.

DURO METAL PRODUCTS CO.
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machine. Short heating cycles, moreover, are more sensitive to variations in line voltage. When the part is heated throughout its whole section, the heating time may be altered within fairly wide limits to accommodate either the production schedule or the handling of the parts by the workers. In some cases the comparatively sharp demarkation between case and core characteristic of surface hardening may be objectionable. The author, therefore, voiced the opinion that surface heating should be limited to cases where surface hardness is essential and core hardness relatively unimportant, or where the part already has a hardened core. Installation of combination heating and quenching equipment he considers justified only if (a) surface heating is essential, (b) large parts such as crankshafts, which are difficult to handle, have to be heated, (c) man power can be saved, (d) production increased or (e) a better article produced.

One part heated by high-frequency induction is a propeller shaft of 1⅛ in. diameter and 6 ft. long, made of medium-carbon steel. Two sections of the shaft, 2.5 and 6.5 in. long, respectively, are hardened, and although they are 3 ft. apart, they are heated simultaneously by means of two induction coils built into the fixture which supports the shaft in a vertical position. The heating time is 12 sec. After heating, the shaft is removed from the fixture and quenched vertically in caustic-soda solution. On the surface the shaft shows a Rockwell C hardness of 54 to 62, while the core hardness will range between 40 and 45. The generator supplying the current is a 50-kw., 960-cycle, 240-volt machine driven at 1800 r.p.m. by a 100-hp. motor. The set includes two 50-kva. capacitators to correct the power factor. Two heating units are connected with the motor generator, and while a shaft is being heated in one unit, the other fixture is being unloaded and reloaded. A timer automatically disconnects the heating fixture after 12 sec. and connects the other unit which has been loaded, so that the process is continuous.

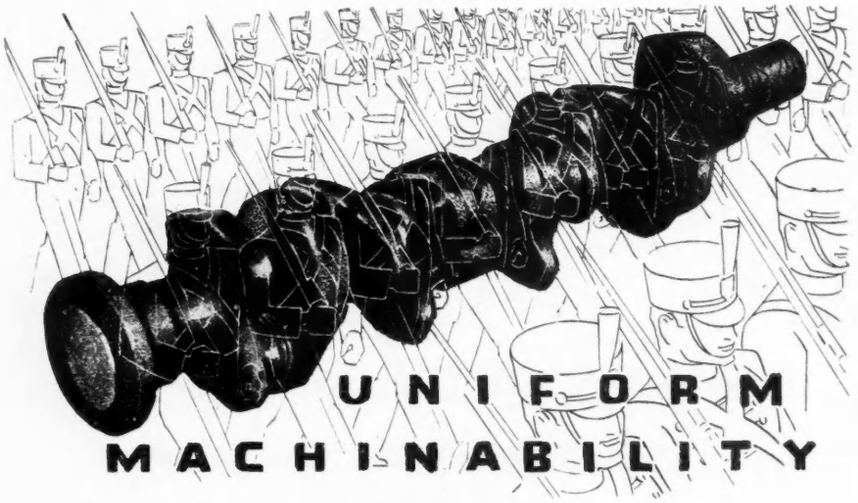
After hardening, 3.5-in. lengths of the hardened shafts are drawn to a Brinell hardness of 302 to 340, to permit of cutting the splines. The same 960-cycle current is used for this operation. Six drawing coils connected in series are mounted in a supporting fixture, and the shaft ends are heated in 48 sec. to approximately 1200 deg. Fahr.

Another induction-heating installation is for hardening the tubular-section bearing surface of the rear-axle housing flange, 2 in. in diameter by 2.75 in. long. This part is made of medium-carbon, copper-silicon cast steel. The part weighs 8 lb., the heated section only 1.25 lb.

One high-frequency induction-hardening installation in the Ford plant was build by an outside concern. It is used for hardening the inside bearing surface of the rear-wheel hubs. It operates on the principle of surface hardening. A 500-kw. motor generator is used and serves two hardening machines. Transformers built into the heating machines reduce the voltage at the heating coil to 110. The inside surfaces of the hubs are heated very rapidly to a depth of about ⅛ in. and quenched with water in place after the heating coil has been withdrawn, the actual heating time being less than 2 sec.

A number of induction-heating installations in the Ford plant use 60-cycle current. One of these is used for heating the already-hardened starter ring gears to expand them prior to shrinking them on the flywheels. This treatment also serves to temper them. The heater is based on the transformer principle, three or four gears being placed around the U-shaped laminated cores to form the secondary. The primary coil is wound of ⅜-in. copper tubing on the far end of the laminated core. The gears thus are heated from the inside, and the body reaches a temperature of about 900 deg. Fahr., which reduces its hardness and increases its ductility. The teeth on the other hand, have their hardness reduced only little, because the current is auto-

(*Turn to page* 302, *please*)



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Increasing Fatigue Life of Valve Springs by Shot-Blasting

That the surfaces of metallic articles can be hardened by "spraying" them with small steel balls has been known since Herbert in England announced his "cloudburst" method of hardening. Now surface hardening is one method of increasing the fatigue life of parts subjected to repetitive stresses, and shafts made of mild steel that have to withstand shock load are sometimes case hardened. In recent years the shot-blasting process has been applied to springs of both the coiled and plate type to increase their fatigue life. Results of very extensive tests on the effect of shot-blasting on the fatigue life of valve springs were given in a paper read by F. P. Zimmerli, chief engineer of the Barnes-Gibson-Raymond Division of Associated Spring Corporation, Detroit, before the American Society for Metals.

It was stated by the author that the company with which he is connected has been shot-blasting coil springs since 1929, and he claimed this process to be more effective in increasing the fatigue life of the springs than alloying of the steel. The process consists in projecting small steel balls against any surface to be treated, either by means of a blast of compressed air, or else by mechanical means. To throw the shot against the surface mechanically it is fed to a rapidly revolving wheel with radial vanes. Similar results are produced by both methods, but the mechanical process produces results more rapidly.

To test the effectiveness of shot-blasting in increasing the fatigue life of springs, an endurance testing machine was designed to handle a reasonable number of springs simultaneously, to permit of adjusting the loading conditions, to impose the calculated spring loads accurately at the desired speeds without spring surge, to record the number of stress applications up to the point of failure, and to be able to run for long periods without attention.

All stress calculations were based on the formula of A. M. Wahl, which takes account of both torsional and shearing stresses:

$$\text{Maximum stress} = \frac{16\,P\,r\,(4\,c-1)}{n\,d^3\,(4\,c-4)} + \frac{0.615}{c}$$

where P is the axial load in lb.; r, one-half the mean diameter of the spring; d, the wire diameter, and c, the ratio of the mean diameter of the spring to the wire diameter. This maximum stress occurs on the inside of the coil.

Springs are placed in the fatigue machine, and runs are made with various stress ranges. The stresses are made high enough to insure breakage, and in subsequent tests they are reduced by small amounts until fatigue failures do not occur. In this way it is possible to establish the endurance limit of the steel being tested for a given minimum stress. The maximum error in these fatigue tests is said to be plus or minus 3000 lb. per sq. in.

Runs were made to study the effect of the time of exposure to shot blasting on spring wire of 0.162 in. diameter, made of steel containing 0.65 per cent carbon, 0.58 per cent manganese, 0.02 per cent phosphorus and 0.015 per cent sulfur. This steel had an elastic limit of about 175,000 lb. per sq. in., a reduction in area of 49.5 per cent, and an elongation of 8.6 per cent in 2 in. The springs, which had 3¾ active coils of 1 7/32 in. outside diameter, and a free length of 1⅞ in., had a fatigue range, before shot blasting, of 20,000 to 95,000 lb. per sq. in. Shot-blasting for 10 min. increased the fatigue limit to 135,000 lb. per sq. in., substantially in proportion to the duration of the process, while longer exposure did not result in any further increase in the fatigue limit. After being shot-blasted, and before being subjected to the fatigue

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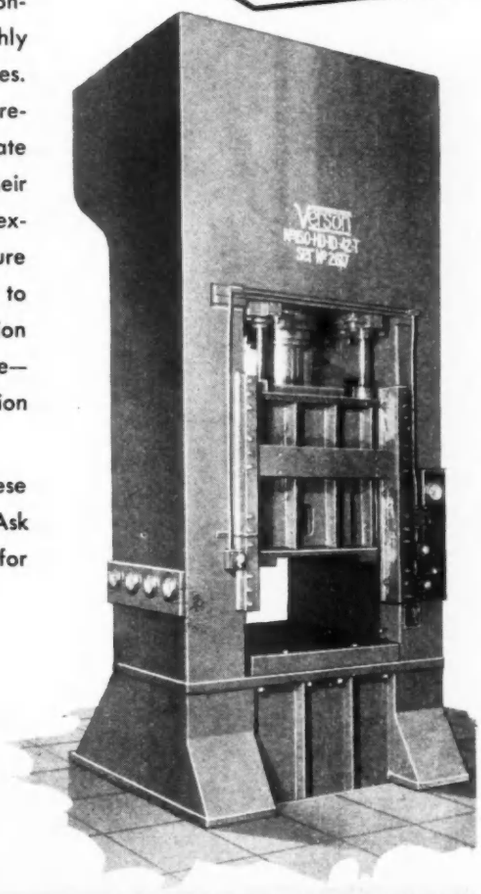

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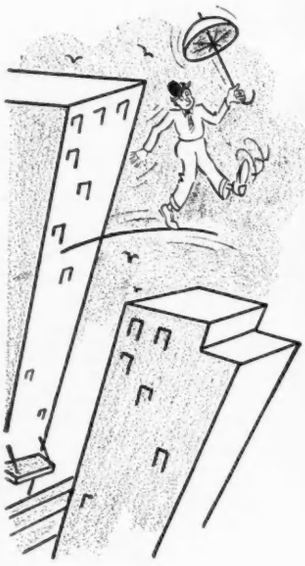
Increase in Stress Range of Coil Springs due to Shot-Blasting

Material	Normal Stress Range Pounds Per Sq. In.	Shot Blasted Stress Range Pounds Per Sq. In.
Valve Spring Wire	20,000 to 95,000	20,000 to 135,000
Music Wire S.A.E. 1095	20,000 to 90,000	20,000 to 135,000
9260 S.A.E.		
6150 S.A.E.		
Electric Furnace	20,000 to 90,000	20,000 to 135,000
18-8 Stainless	20,000 to 65,000	20,000 to 110,000
13-2 Stainless	20,000 to 80,000	20,000 to 120,000
Phosphor Bronze S.A.E. 81	20,000 to 35,000	20,000 to 50,000

test, the spring was held at 500 deg. Fahr. for 20 min. In commercial shot blasting of small springs the duration of treatment depends on the number treated, the optimum duration being determined by experiment. It was found it required three times as long to produce the same result by air-blasting under a pressure of 65 lb. per sq. in.

If the springs, after being shot-blasted, are heated to above 500 deg. Fahr., some of the gain in fatigue life is lost, and if they are heated to 825 deg. the fatigue limit is back to the original 95,000 lb. per sq. in. The increase in life produced by the shot-blasting is evidently the result of cold working, and can be removed by heating. That the result is due to cold working is shown also by photomicrographs. The peening action on the surface material is responsible for the change in fatigue resistance. The shot-blasting produces a rough surface, and surface roughness, therefore, is not necessarily cause of failure.

Tests with metallurgically sound pretempered valve-spring wire indicated that wire can be produced and blasted so that the resulting compression spring is self-protecting. That is, if it is properly heated after coiling, the spring, if overloaded, will "set" to a load corresponding to a stress the material will withstand. So far as the tests show, the spring will then last indefinitely. Unfortunately, however, much material used in spring manufacture is not perfect. No improvement results from shot blasting if seams or hairlines are present. On wire that is badly gouged, either by the wire maker or the spring producer, the shot blasting apparently does not reduce stress concentration or increase life to any great extent. With scratches that are round at the bottom (as most mechanical scratches are), a normal increase in endurance was obtained by shot blasting. Scratches up to 1/4000 in. deep can be removed, but except for this and the improved appearance of the part, shot blasting is of no help. The author gave results obtained by shot blasting of wires of 0.148 in. diameter, of different materials, in the form of a table which is produced herewith. He warned, however, that the highest stresses mentioned should not be used in practice, because the springs will set or lose load to some extent.



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WELLS METAL CUTTING BAND SAWS

Induction-Heating for Hardening and Tempering

(*Continued from page* 300)

matically shut off when the tooth portion reaches a temperature of 500 deg.

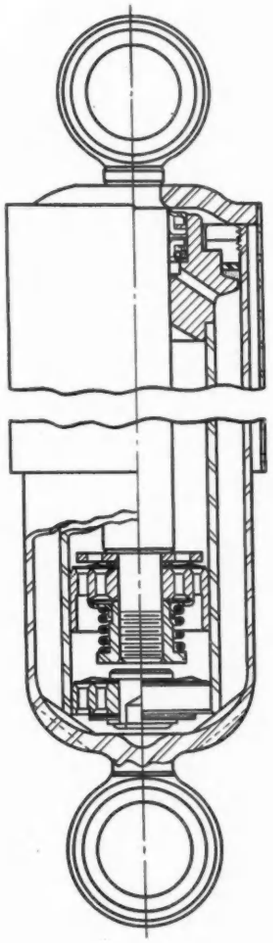
Several small 60-cycle heaters are used to expand sleeves preliminary to shrinking them on shafts. These heaters are greatly preferred to furnaces, as they are set up in the production line and heat only on demand. As in all other cases, the heating time is controlled by timers.

In the opinion of Mr. Blasko there are few makers of heat-treated parts who could not benefit by the installation of at least one high-frequency motor-generator or converter set. Heating coils are not expensive, and can be made on a lathe, and such experimenting will arouse wide interest in induction heating. However, if there is a problem of heating a certain part, the help of concerns who specialize in equipment for induction heating is advisable.

New Monroe Shock Absorber for Heavy Duty Vehicles

Of interest to engineers, fleetmen, and dealers is the recent announcement of a new direct-acting shock absorber which has been added to the line of the Monroe Auto Equipment Co., Monroe, Mich. This unit, designed for use on motor trucks and buses, has a two-inch piston, rounds out the Monroe line which now affords—a one-inch unit for passenger cars, the new two-inch unit for heavy-duty motor vehicles, and the three-inch size for railroad cars.

The principle of operation of all Monroe direct-acting shock absorbers is the same, a major feature being the relatively high displacement of fluid resulting in lower internal pressure. In operation, the control on the rebound side of the stroke is accomplished by means of a flexible steel disc, supported by a coil spring which is assembled on the lower side of the piston. The stronger the spring, the higher the control.



On the compression side of the stroke, control is established by a valve in the base which carries a stack of discs, held in place by a central rivet which is spun-over. These discs are located on the under side of the base valve, control being increased by adding more discs to the stack.

The construction of these shock absorbers is relatively simple. It consists of a pressure tube in which the piston operates, the tube being held in place by end pressure through a piston rod guide. This guide, in turn, is kept in place by a threaded ring screwed into the upper end of the reserve chamber. The lower, or reserve, tube is made in one piece by a new process which forms its lower end into a cup shape by rolling. A forged loop for chassis attachment is welded to this lower end.

The upper assembly consists of a piston rod to which is secured a cap with a forged loop similar to that used in the base welded in position. The piston rod is sealed at the piston rod guide by a specially designed seal. A dust tube welded to the cap completes the upper assembly.

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Fuels and Lubricants for Trucks and Buses

Exceeding the fondest expectations of its sponsors, the National Forum on fuels and lubricants, sponsored by the bus division of the American Transit Association drew an attendance of over 300 people in Detroit, February 17-18, attracting bus operators, equipment manufacturers, and petroleum technologists.

The technical program resolved itself into an all out discussion of operators' troubles—bearing failures, varnish, sludging, and all the rest, emphasizing the role of the new heavy duty lubricants in bus and truck operation. In this connection, C. J. Livingstone of Gulf Research Corp., contended that the H.D. lubes should be applied only in limited service, perhaps on only two per cent of heavy duty vehicles in service.

Despite varying opinions as to the utility of oil filters, the consensus was that the right kind of oil filter is an essential part of a heavy duty engine, pointing out, however, that filter elements must be replaced frequently and that filter units must be thoroughly drained and flushed to prevent the formation of "coffee grounds" sludge. When it comes to operations in which the compounded and detergent oils are used, it was indicated that the chemical type of filter was not suitable since it tends to remove the additives.

Of interest to engine designers were comments favoring the use of ejector type crankcase ventilation or some other adequate means for venting the crankcase without increasing oil consumption and without additional aeration; a proposal to limit the volume of the oil sump with provision for supplying make-up from an auxiliary reservoir; suggestions for improving the control of oil and cooling system temperatures so as to prevent the formation of oil acidity.

Perhaps the major contribution on the matter of bearing failures was that of Dr. J. C. Geniesse of Atlantic Refining and Dr. H. R. Wolf of G.M. Research, supporting their presentation with micro-graphs illustrating the usual types of failures. Wolf said emphatically that the copper-lead bearing is perfectly acceptable for heavy-duty service while Geniesse made an urgent plea for an appreciation that the lubricant is not responsible for all bearing failures that are experienced.

Generally speaking, bearing failures are of three distinct types:

1. Lead corrosion
2. Copper corrosion
3. Mechanical fatigue.

According to Geniesse, lead corrosion is due principally to either high temperature or poor oil since this form of failure is caused by oil acid corrosion. He indicated, nevertheless, that all oils will give this trouble if crankcase temperatures go above a certain limiting value. Copper loss or corrosion is experienced primarily in buses, very seldom in trucks, and practically never in diesels, although diesels do have lead corrosion. This is a low temperature effect, caused by sulfur attack, probably from products of combustion. It is an entirely new problem. Adequate crankcase ventilation is one of the cures.

Bearing fatigue is experienced mostly on motor trucks, shows up in the form of pieces of the bearing metal actually breaking away. It is a product of poor bearing structure, bad maintenance procedure in bearing installation, aggravated by excessive temperature and high loading.

General Motors Research finds that lead corrosion may be due to three causes:

a. Oil acid attack
b. Acceleration of acidity by metallic soaps
c. Direct attack by metallic soaps, appearing in the region of high pressure area.

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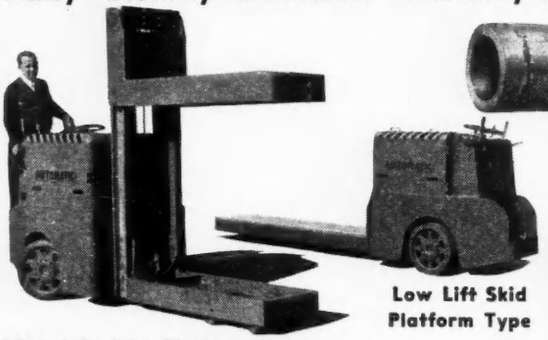
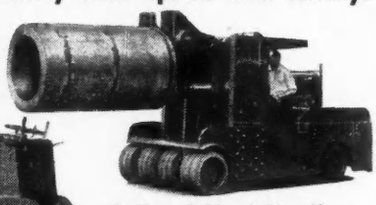


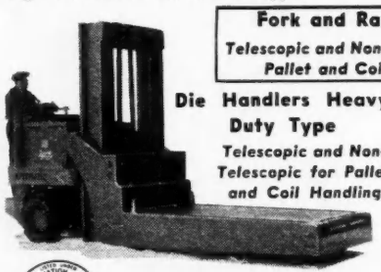
Low Lift Skid Platform Type

High Lift Skid Platform Type



Coil and Sheet Handlers

Fork and Ram Trucks
Telescopic and Non-Telescopic for Pallet and Coil Handling



Die Handlers Heavy Duty Type
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Platform Type with pneumatic tires

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Copper corrosion, on the other hand, leaves the lead intact, is due to entirely different conditions which may be outlined as follows:

a. Attack of oil acids of low molecular weight
b. Crankcase corrosion products
c. Corrosion products from outside sources.

For example, in copper corrosion there is frequently a surface layer of foreign material which bears no relation to the composition of the bearing itself. Wolf believes that this surface layer is composed of extraneous material coming from an improperly maintained oil filter. A sample analysis showed that the surface layer contained around 12 per cent of sulfur. Further checking disclosed that the filter sludge impregnated in the element contained about 32 per cent free sulfur which was being circulated and fed into the lubricating system of the engine. It should be noted that sulfur has seemingly paradoxical properties. Actually sulfur is an excellent corrosion inhibitor—provided it is in a combined form, that is, firmly attached to gasoline or oil molecules. But free sulfur, the kind that comes out of combination due to cracking in the combustion chamber or from other sources, is the most vicious kind of corrosion product.

The consensus among fleet operators was that the petroleum industry should make available special lubricants and special fuels designed specifically for heavy-duty equipment, as distinct from the products marketed for general passenger car use.

Vapor lock still is a persistent problem in bus operation. The ATA has recommended that bus manufacturers so design the powerplant as to assure an underhood temperature not exceeding 40 deg. F. above the ambient temperature of the atmosphere. Many operators have adopted the electric fuel pump in this connection owing to the facility with which such attachments can be introduced in locations not affected by under-hood temperature.

Production Planning Board is New OPM Contributory

A production planning board to serve during the present emergency and to study post-war planning has been established under the Production Division of the Office of Production Management. Director of Production John D. Biggers announced that the board will study World War experience, the War and Navy Department's industrial mobilization plan, and the procedure followed by the National Defense Advisory Commission in the early days of the current defense program.

First job to be undertaken by the board, according to Chairman Samuel Richard Fuller, president of the North American Rayon Corp., will be to launch a comprehensive study of the problems of defense production for the benefit of directing officers in the OPM.

Other members of the board include John L. Pratt, Fredericksburg, Va., retired former executive vice-president of General Motors Corp. in charge of parts and accessory division; William E. Levis, of Toledo, board chairman of the Owens-Illinois Glass Co.; Robert E. Doherty, president of the Carnegie Institute of Technology; George W. Meany, secretary-treasurer, American Federation of Labor; and James B. Carey, CIO secretary and general president, radio and machine workers union.

War and Navy Department representatives on the board include Admiral William Harrison Standley, retired former chief of naval operations; and Maj. Gen. James Henry Burns, whose former assignments cover the Office of the Chief Ordnance Officer, the Office of the Assistant Secretary of War, and Commander of the Raritan Ordnance Depot.

Harry E. Hopkins, former Secretary of Commerce, who just returned from England where he acted as special envoy at the request of President Roosevelt was also designated a member of the planning board.

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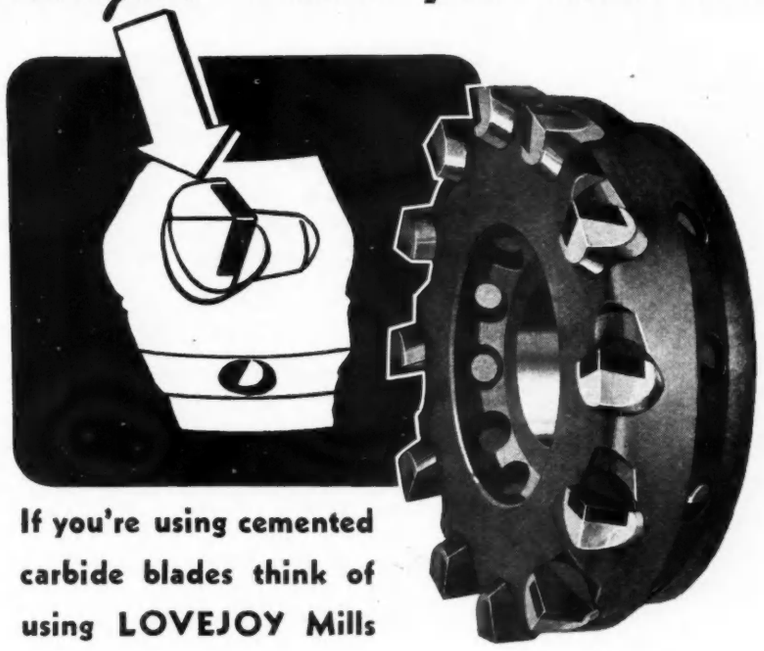

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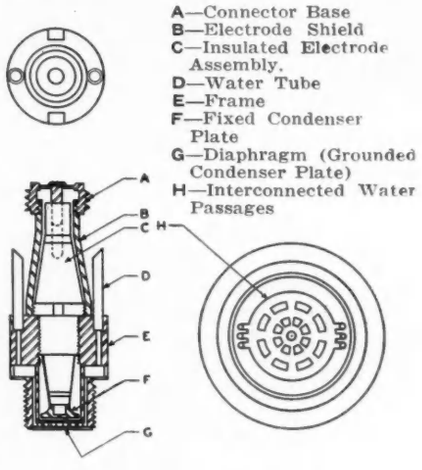
Condenser-Type of Electric Indicator Developed by G.M.

AN ELECTRIC indicator for indicating and recording rapid pressure variations in internal combustion engines, etc., was developed by the Research Laboratories Division of General Motors Corporation some 15 years ago and was described in AUTOMOTIVE INDUSTRIES at the time. This indicator comprised a diaphragm that was subjected to the pressure in the engine cylinder, and deflections of the diaphragm due to pressure variations were transmitted to an arm pressing against two stacks of carbon disks, one above and the other below it, so that any motion of the arm would increase the pressure on one stack and reduce that on the other. The electrical resistance of such a stack of carbon disks varies with the pressure upon it. The two stacks formed two arms of a wheatstone bridge, and any variations in their respective resistances resulted in a difference in potential between the junctions of the bridge to which the galvanometer is connected. Variations in cylinder pressure caused corresponding variations in current flow through the galvanometer or oscillograph, which could be made visual or recorded photographically. This type of electric indicator is now referred to as the resistance type.

Recently the Research Laboratories Division has developed another electric indicator, described as of the condenser type, and a description of this instrument was given in a paper presented at the Winter Meeting of the American Institute of Electrical Engineers by E. J. Martin, C. E. Grinstead and R. N. Frawley. It appears that the resistance type of indicator was too sensitive to shock, and, therefore, was not suitable for use on modern aircraft engines of high specific output. The most interesting part of the new indicator is the pressure element, of which a sectional view is shown herewith. It is in the form of an 18-mm. spark plug and screws into a spark-plug hole. The diaphragm closes the



end of the threaded part of the "plug." The frame and diaphragm form an integral unit which is machined from a solid piece of invar steel. Water cooling keeps the temperature of the pressure element within the range in which the temperature coefficient of the invar is very low. After passing through the frame, the cooling water flows through a series of interconnected concentric grooves machined on the bottom side of the heavy diaphragm and sealed by a thin disk which is copper-brazed in place. The diaphragm forms the movable, grounded plate of an electric condenser, the other plate of which is mounted on the lower end of a central insulating core, which is made from the mica-insulated central electrode of an aircraft spark plug. Movement of the diaphragm is limited to 0.0003 in. An air gap of 0.002 in. is provided between the two plates, and in order to increase the initial capacity and sensitivity of the indicator, a mica separator 0.001 in. thick is placed between them.

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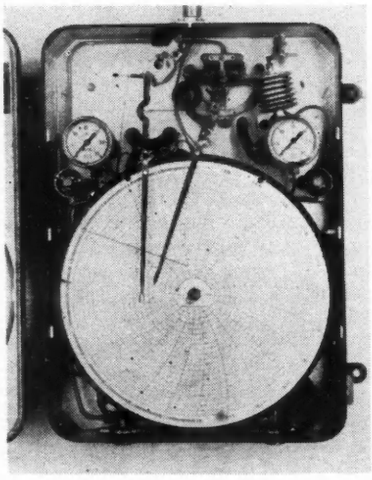
MEN and MACHINES

Bristol's Pre-Set, Free-Vane Temperature Controller

The Bristol Company, Waterbury, Conn., announces a new throttling-type air-operated temperature controller for use in processes where the thermal characteristics are such that there is a tendency for the temperature to exceed



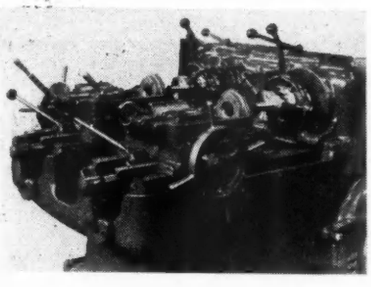
Air operated temperature controller

the control setting of the instrument on the initial rise. Many processes have heating characteristics which cause over-shooting of the control point on the starting-up phase of the cycle. This is due primarily to a slow rate of circulation and resistance to heat transfer. On processes of this type the pre-set controller introduces a presetting effect that is proportional to the width of throttling range and also to the rate of change of the condition being measured and controlled. The controller action occurs prior to or during the approach of the pen to the control point. It tends to decrease the rate of change of position of the pen and permits the controlled temperature to gradually approach the control point.

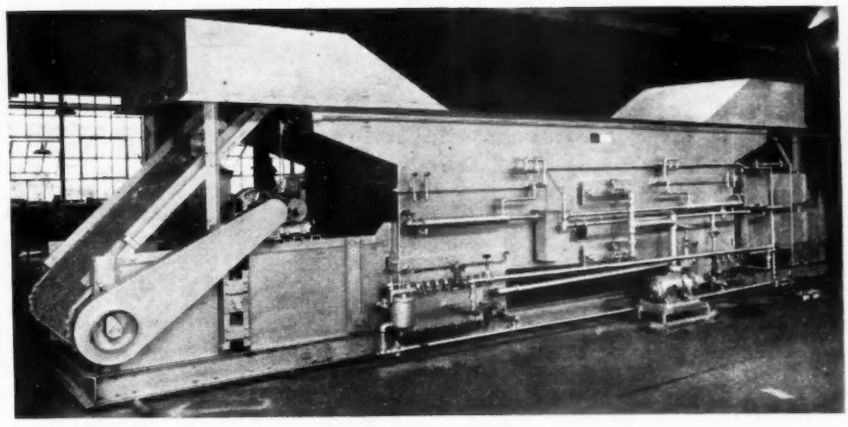
Landmaco HO Shell Tapper

Recently added to the line of threading machinery manufactured by the Landis Machine Co., Inc., Waynesboro, Pa., is the Landmaco HO shell tapper, which provides a means for tapping the smaller sizes of shells. It is based on the Landmaco threading machine, a collapsible tap being substituted for the usual die head. A special work-holding device provides a rigid support for the parts to be tapped.

The tap is of the ALT type, that is, it is designed primarily for cutting straight threads. It is made of alloy steel and all parts are hardened or heat-treated, and precision-ground. Means are provided in the special trip ring of the tap to direct the flow of cutting coolant within the bore of the work. The special work-holding device, which is mounted directly on the carriage, comprises a hardened and ground bushing to support the nose-end of the shell and either a male or female rear centering bushing, which not only supports



Landmaco HO Shell Topper



BLAKESLEE . . . PIONEER IN PARTS WASHING AND DEGREASING MACHINES *SPEEDS AUTOMOTIVE AND AVIATION PRODUCTION...*

Fast **is the word up and down the production lines of the automotive and aviation industries today. *Fast* is the word that describes the efficiency of Blakeslee engineered-for-you Metal Parts Washing Machines and Solvent Degreasing Equipment. Blakeslee Washing and Degreasing Machines remove oil, chips and drawing compound from all metal parts 100%, so that finishing, machining and inspection operations are stepped up by precious minutes and hours.**

The installation of Blakeslee engineered-for-you Washers and Degreasing Machines means not only faster and more efficient production but real savings in washing costs and labor.

The pioneer name in parts washing and degreasing equipment is the leading name in meeting today's demands for greater efficiency. Consult Blakeslee engineers without obligation concerning your washing and degreasing problems.

Descriptive literature furnished upon request.

G. S. BLAKESLEE & COMPANY

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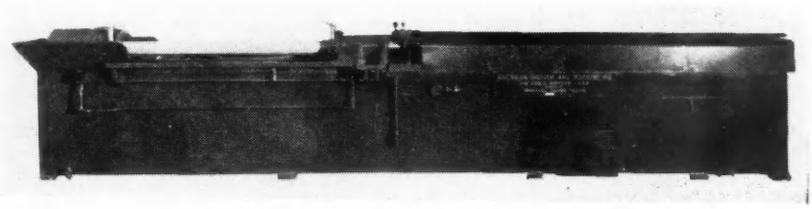
the base end of the shell but also provides the clamping action for holding the work rigidly in the fixture.

The rear centering bushing is mounted on a slide in direct contact with a lever operated cam employed to advance the bushing, which provides the means for locking the work in the fixture. A pressure spring returns the bushing and releases the work when the operator releases the cam. This unit is adjustable for work of different lengths within the range of 60 and 81 mm. mortar shells of the high-explosive type, and is also suitable for the 3-in. British mortar-type shell.



American hydraulic gun-rifling machine

American Broach Hydraulic Gun-Rifling Machine

The American hydraulic gun-rifling machine, herewith illustrated, is designed for broaching rifling grooves of constant helix in gun barrels. To produce the rifling grooves, a cutter of high-speed steel is pushed through the gun, being driven at the proper helix angle so as to broach all of the grooves together. The diameter of each cutter exceeds that of the preceding one, so as to take chips of between 0.001 and 0.002 in. The cutter is mounted at the end of a long quill guided in the bore of the gun barrel.

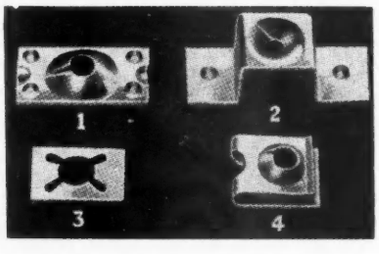
The machine is of standard American construction, consisting of a fabricated-steel bed containing the hydraulic cylinder, oil reservoir, valving, piping, and motor and motor controls, as well as the entire coolant system. The slide is of normalized and seasoned nickel iron and the cylinder, which is properly supported in the slide, is of steel tubing, bored and honed to a mirror finish. Ways of the slide are scraped to a full bearing and guided in the hardened and ground bed ways, which are automatically lubricated at each stroke.

The master lead bar, which is hollow to permit a generous supply of coolant to the cutting tool, is driven laterally through a roller thrust bearing by the cylinder slide unit, and spiraled by a driving plate, adjustable for index. The driving plate unit is provided also with a back-lash takeup. It is mounted in a casting integral with the quill support and front support for the part. Cutting is from the muzzle to the breech end.

This machine has a capacity of 12 tons, a cutting speed of 15 ft. per min., a return speed of 30 ft. per min., a maximum stroke of 100 in., a work height of 40 in., an overall height of 4 ft., occupies 22 by 2½ ft. floor space and weighs 24,000 lb. It requires for its operation a 15-hp., 1200-r.p.m. electric motor with "across-the-line" starter and pushbutton station.

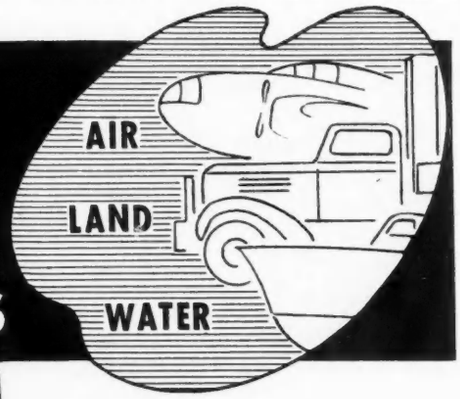
Prestole Fasteners

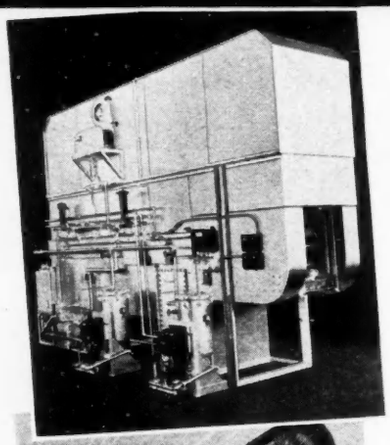
A new line of fastening devices, known as Prestole, has been announced by Central Screw Co., Chicago, Ill. They are claimed to permit speedier produc-

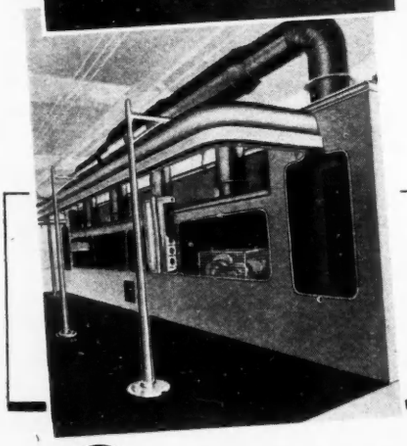


Prestole Fasteners (1, 2 and 4)

DETREX
Serves
VITAL
INDUSTRIES







Metal cleaning methods adopted throughout the automotive industries during the past few years are those which are now proving their worth in today's peak production. It is significant that in most automobile plants and aircraft engine factories, Detrex equipment and materials are in regular use.

Wherever efficient and economical metal cleaning is a requirement—for either armament work or regular production—Detrex Cleaning will assure finer finishes . . . better performance . . . lower costs. Detrex equipment and materials are developed and manufactured for Solvent Degreasing; Alkali, Spirits and Emulsion Cleaning; Bonderizing, Painting and Baking.

- A conveyorized Vapor-Spray-Vapor Degreaser used for cleaning component parts of aircraft engines.
- Detrex spray washer with through-type monorail conveyor

SOLVENT DEGREASING and ALKALI CLEANING
DETROIT REX PRODUCTS COMPANY
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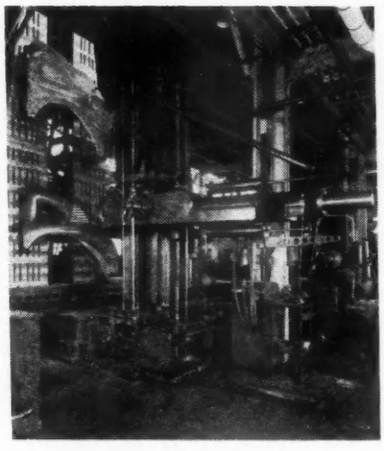
Branch Offices In Principal Cities of U. S. A.—In Canada: Canadian Hanson & Van Winkle Co., Ltd., Toronto, Ontario

tion and more rigid assemblies. Formed by press operations from cold-rolled steel, they embody a resilient, conical "slit-thread" which, it is claimed, not only readily takes a screw of matching thread, but also produces an assembly of such quality that a push-on type of fastener is not necessary. The Prestole method of fastening is offered in stampings of standard pattern, as well as in special shapes to meet specific requirements.

Turchan Follower Machine

An interesting duplicating attachment for all kinds of machine tools has been placed on the market by the National Purchasing Co., 405 Boulevard Bldg., Detroit, Mich. The Turchan follower machine, as the attachment is called, is essentially a duplicator for following the contour of dies, patterns, molds or tamplates, holding the cutting



Turchan follower machine

tools to the precise tolerances of the original.

The device, when attached, becomes an integral part of a standard milling machine, boring mill, lathe, planer, etc., and greatly increases the capacity of these tools. It is claimed that this equipment has effected economies in the production of tooling for the manufacture of autobody parts, airplane propellers, disc wheels, and in the handling of duplicate turning jobs on lathes.

Combined Vacuum Cleaner and Blower

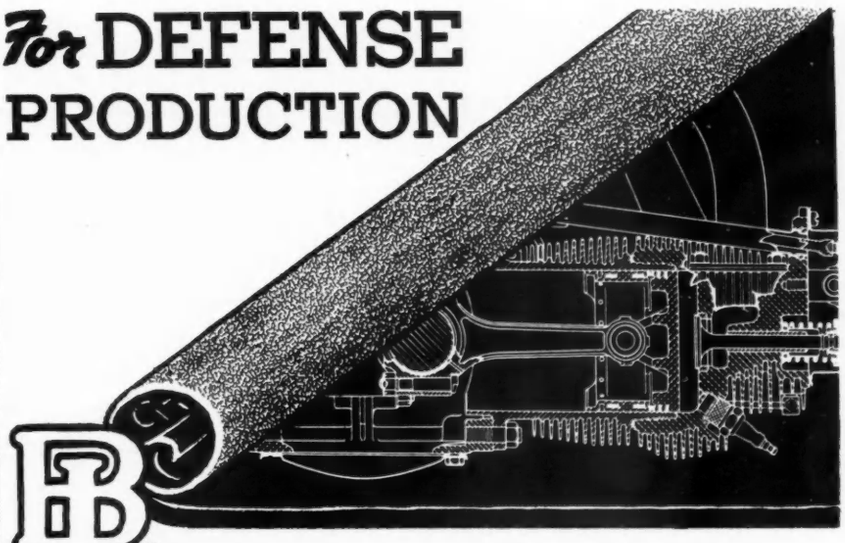
The Black & Decker Mfg. Co., Towson, Md., now offers what it calls a super-powered vacuum cleaner, the No. 95 Vackar, for both automotive and industrial use. It has a 1-hp. motor driving a three-stage centrifugal fan. The cleaner is claimed to have a sealed vacuum pull of 65 in. and to draw 60 cu. in. of air per minute.

Being equipped with both inlet and outlet hose connections, it can be used either as a vacuum cleaner or blower. A system of baffle plates and filters adapts it to wet cleaning and to removing excess moisture after scrubbing upholstery and carpets. The motor and mechanism are completely protected from the moisture. Air for blowing operations is filtered.

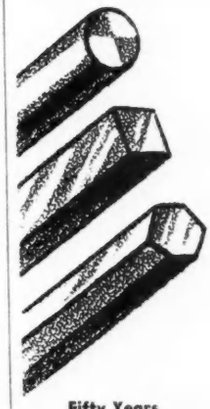
New Edge-Grip Stretching Tool

A stretching tool for steel strapping shipments, which is said to embody a new gripper-action principle, has been made available to shippers by Signode Steel Strapping Co., Chicago, Ill. The gripper jaws are located in the bottom of the front base of the tool, and the strap is gripped at the edges, so that the foot or base of the stretcher is not under the strap during the tensioning operation. With this new stretcher it is said to be possible to apply strap of wide and heavy gage to small bundles of steel rounds, flats and hexagons, and to other non-compressible commodities, such as motor-truck springs, steel coils, etc., with considerable tightness. As there is no stretcher foot under the strap, all slackness is eliminated. This stretcher is being manufactured in two sizes.

For DEFENSE PRODUCTION



COLD FINISHED...
Bessemer Screw Stock



Fifty Years 1891-1941

Whenever your shop drawings call for automotive parts, fabricated from Bessemer screw stock, there is a chance to step up production by using B&L Cold Finished Bar Steels.

These free-machining steels are especially adapted for defense production orders where increased output must be obtained without sacrifice of quality, so as to meet strict specifications.

B&L SAE 1112 corresponds to the regular grade of Bessemer, and B&L SAE X-1112 is the popular Ultra-Cut Steel, a high-sulphur grade for intricate machining on the latest type of automatics.

Both of these screw stocks are developed in B&L mills to a high degree of uniformity and machinability. You will find that they give 10% to 40% better machining rates than you have been accustomed to getting from your Bessemer screw steels.

Try an order of B & L Bar Steels on your next big run . . . a change of steel may increase machine efficiency.

Cold Drawn Bars . Ground Shafting . Screw Stock . Leaded Steels . Alloy Steels

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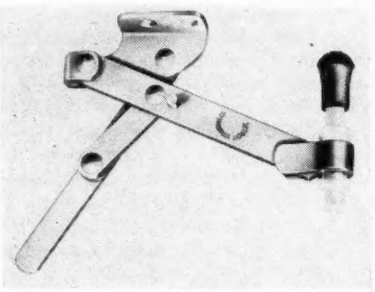


De-Sta-Co. Model 200 Junior toggle clamp

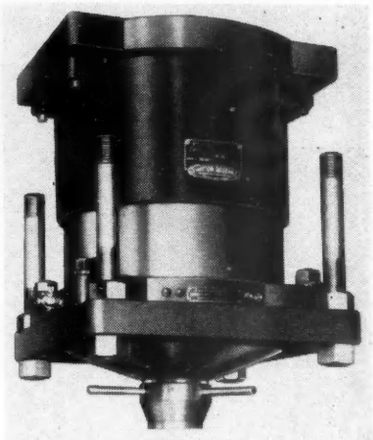
Toggle Clamp for Aircraft Production

Detroit Stamping Co., Detroit, has just announced the addition of a new model to its line of toggle clamps. It is of small size—6 by 6 by 1 3/16 in.—and is said to be specially suited for production work in the aircraft industry. This toggle clamp, known as the "De-Sta-Co. Model 200 Junior, Special Light Duty," has a clamping ratio of 33 to 1, and is intended for holding parts during welding, drilling, machining, assembly and other aircraft-production operations. It is made of cold-drawn steel, is bright-cadmium plated, and weighs only 9¼ oz.

Dayton Rogers Universal Die Cushion

Dayton Rogers Manufacturing Co., Minneapolis, Minn., announces its new Model DM universal pneumatic die cushion. This die cushion, which is self-contained and requires no surge reservoir, is furnished with a combination regulator and gage for shop air-line connection.

These cushions can be adapted to all punch-press deep-drawing operations, and can be used to advantage for pressure-pad control on a large percentage of forming dies. All pin-pressure pads are fabricated for the particular press application, with the correct amount of press-bed clearance in each case. The correct height of the pin pressure pad is maintained and controlled by the adjusting hand-wheel.



Rogers Model DM pneumatic die cushion

This cushion makes it possible to remove the bolster plate at any time. It is now being manufactured in six sizes, with deep-drawing capacities of up to 5 in. and ring-holding pressures of up to 10 tons on 100-lb. air lines.

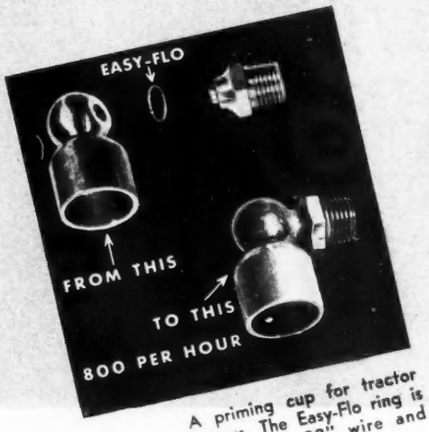
Steel Storage Equipment

A number of shop and tool-storage units recently added to its line by the Aurora Equipment Co., Aurora, Ill., are claimed to combine flexibility with economy. They include a group of tool-room units, each of which is 7 ft. high, 3 ft. wide, and from 8 to 24¼ in. deep. Each unit is divided into top and bottom sections, and all sections are interchangeable. Also added to the line of the firm are floor and wall tool cabinets of new design, tool toters and stock-handling carts, and wire enclosures for tool rooms and parts departments.

Anchor Strapping for Car-Door Bracing

Signode Steel Strapping Co., Chicago, Ill., has introduced steel strapping of

EASY-FLO
—helps make a big production increase



A priming cup for tractor motors. The Easy-Flo ring is made of 1/32" wire and is 3/8" in diameter.

FROM 60 per hour to 800 per hour—that's the increase obtained by brazing the brass priming cups illustrated with Easy-Flo.

This increase in production is exceptional, but the most important point about it is that it shows what can be done with Easy-Flo and a mass production set-up made to use fully all the advantages Easy-Flo offers.

Easy-Flo is becoming a center around which more and more production jobs revolve because it is the **fastest acting** of all brazing alloys and because it has the **lowest working temperature** of any alloy capable of making high strength joints. Furthermore, Easy-Flo is available in sheet, strip and wire which are readily converted into rings, washers and other forms for **preplacement** which is often the key to economy on large quantity work.

Fluxed and assembled with Easy-Flo ring in place, cups are placed on holder bars and enter torch-heated furnace. At the exit end the alloy cools and sets before cups drop into a tank of water. Simple, fast, economical.

GET ALL THE FACTS

Try this efficient alloy in your plant. You can use it on ferrous, non-ferrous or dissimilar metals. We'll be glad to cooperate. Write today for Bulletin AI-10. Let us know if you want a field engineer to call.

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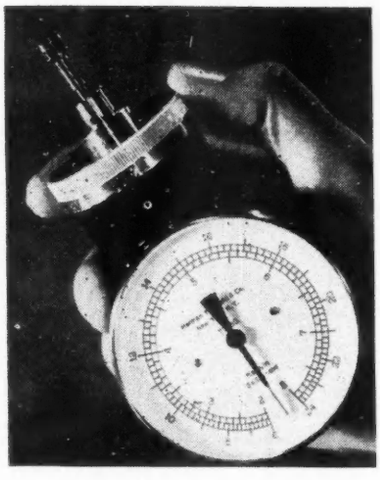
special specification, called Anchor Strapping, for car-door bracing solid carloads of cartoned, bagged, and loose-bulk commodities. Anchor Strapping is fabricated with centered, continuously punched holes, making it faster and easier for the cooper to install. The continuous perforations make it possible for the strapping to be cut to any economical length desired. There are always the much-desired centered punchings at the ends of the cut lengths for fast accurate nailing.

Totally-Enclosed Electric Motors

A new line of totally-enclosed, fan-cooled motors has been announced by Century Electric Co., St. Louis, Mo. These motors are claimed to provide the necessary protection where the air is foggy with metal-cutting solution or where there are abnormal quantities of metallic, abrasive and other dusts in the atmosphere that would clog and possibly injure the windings of an open motor. Cooling air is forced through large air passages by a non-sparking fan. It is asserted that the air-intake passages are not easily clogged and so designed that a 5/16-in. rod will not pass through them.

Direct-Reading Hand Tachometer

Herman H. Sticht Co., Inc., New York, N. Y., has placed on the market a new direct-reading, centrifugal-type tachometer known as the Standco Universal. These tachometers come in four standard range combinations, covering speeds between 30 and 48,000 r.p.m. The instruments have a rotating gear shift in a knurled cover for changing from one to another of the five speed ranges; they have knife-edged pointers which



Standco universal type hand tachometer

increase the accuracy of readings, large 3-in. diameter dials, and wide-open easily-read scales. They are direct-reading, requiring no calculations for the determination of r.p.m. and ft. p. m., and they are said to be very accurate.

BOOST PRODUCTION

The regular HOLTITE line comprises a complete range of screws, bolts and allied fastenings

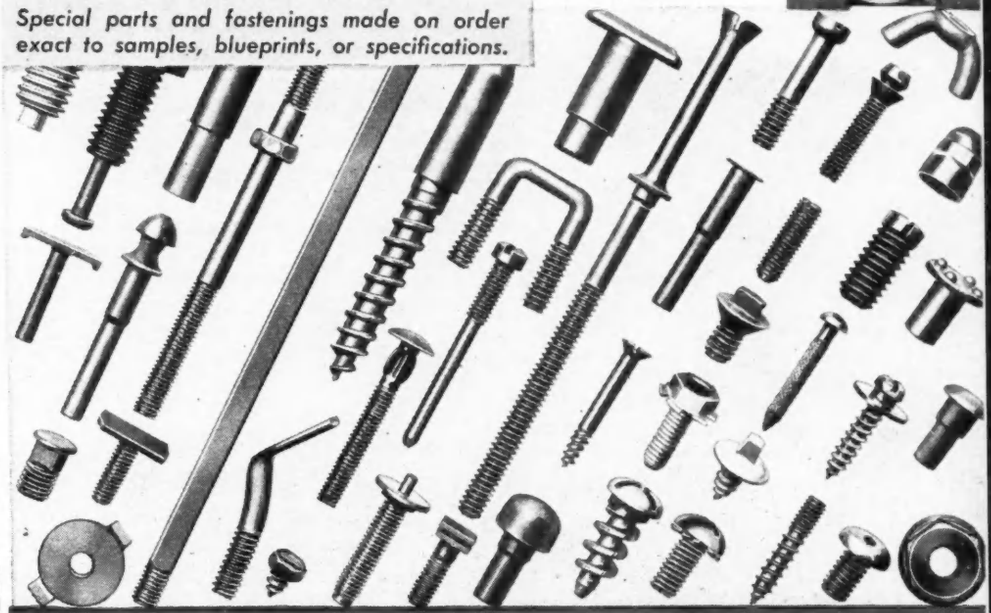
• For smooth, uninterrupted production specify HOLTITE fastenings. By eliminating bottle necks in assembling operations these uniform, durable fastenings speed up production and insure delivery on time! Strength far beyond ordinary demands, tested accuracy and uniformity, rigid inspection — all combine to insure dependable performance.

• For maximum efficiency and economy, specify HOLTITE on your next fastening order. There's a HOLTITE product for every fastening requirement — regular or special.

Special parts and fastenings made on order exact to samples, blueprints, or specifications.

HOLTITE
–Phillips–
Recessed Head
Screws & Bolts

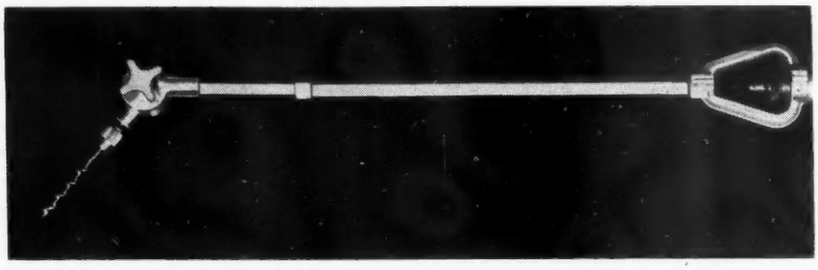
By cutting assembly costs up to 50% and more, these modern fastenings are now used by every manufacturer interested in reducing assembly time, costs, spoilage and injuries.



CONTINENTAL
SCREW COMPANY
New Bedford, Mass. Warehouses at Detroit and Chattanooga

Universal Attachment for Electric Drills

The Kett Universal is an attachment for electric drills which makes it possible to drill holes in restricted or more or less inaccessible places. It will be marketed by the Kett Appliance Co., Union Central Bldg., Cincinnati. There will be five different sizes. The large size, which will drill holes in wood up to 2 in. diameter, will be used mainly by steam fitters, plumbers and shop-maintenance men. The next size, which will drill holes up to 1¼ in. in diameter, will be used mainly by electricians. The third size, for use with ¼-in. electric drills, is intended for use in automobile assembly and in airplane work. These attachments can be quickly fitted to any electric drill, and it is expected that they will soon be available through manufacturers of electric drills throughout the country.



Kett attachment for electric drills

Men at Work

in the private offices and in all corners of automotive industrial manufacturing plants, influence the buying of materials, tools, machinery and equipment.

In addition to the buyers whom your own salesmen contact, AUTOMOTIVE INDUSTRIES reaches men whose names you'll never know—but whose recommendations may mean millions to you.

Also Automotive Industries helps to create and maintain the good reputation of your product in quarters where that help will do the most good.

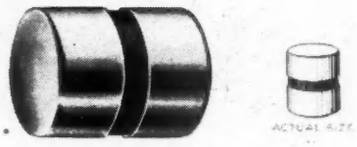
Automotive Industries

A Chilton Publication

Chestnut & 56th Streets Philadelphia, Pa.

Littelfuse Introduces Midget Mercury Switch

An extremely small mercury switch measuring 7/16 inch long by ⅜ inch diameter has been placed on the market by Littelfuse, Inc., Chicago. This switch is designed for use in low voltage circuits up to 25 volts alternating current or direct current and currents up to 10 amperes at six volts and three amperes at 25 volts. There is no friction or wear in operation, and no attention is required. The durable metal and bakelite body contains the mercury. A newly designed baffle device provides positive "make or break" operation, with no opportunity for a flickering action when the equipment is jolted. This switch is designed to fill the need for an inexpensive, reliable switch in circuits for thermostats, automobile glove compartment, trunk and hood lights, radio door lights, telephones and indicators.



Midget Mercury Switch

Glass Tires Now in Experimental Stage

The ideal motoring conditions offered by super-highways may soon result in a new kind of automobile tire, perhaps one made of synthetic rubber and glass and capable of excelling the safety and wearing qualities of today's casings, even at sustained speeds of 75 miles an hour, according to K. D. Smith, technical superintendent of the B. F. Goodrich Company's tire division.

Blueprints of such tires are ready now, and experiments using steel, glass, flax and improved varieties of cotton and rayon for making tire cord are being conducted.

Essolube HD, a New Lubricant for Heavy-Duty Engines

A NEW lubricant for heavy-duty engines has been developed by the Standard Oil Company of New Jersey and will be marketed under the trade name Essolube HD. The troubles which this new lubrication product is specifically designed to prevent include ring sticking and varnish formation on pistons. The new lubricant is a compounded oil of the metallic soap type. It is claimed to combine highly detergent properties with a high viscosity index and high stability. Its viscosity index of close to 100 is said to be nearly twice that previously available in special detergent oils meeting the full range of known heavy-duty engine requirements. In addition to inherent resistance to high temperatures and oxidizing influences, it is claimed to have exceptionally high ability to wash out sludge deposits, to protect bearings against corrosion, and to practically prevent the formation of varnish on pistons, valve stems, rings and other engine parts.

Detergent oils are not new, but it is pointed out by Esso engineers that heretofore oils with sufficiently high detergent properties to eliminate ring sticking, varnishing, and sludge deposits in the full range of present-day heavy-duty engines have had to utilize base stocks of relatively low viscosity index, for chemical reasons. While such oils increased the cleanliness of the engine markedly, in many engines oils are required whose base stock also shows high resistance to oxidation and does not induce bearing corrosion. A major problem for petroleum chemists therefore has been to develop an oil which, while possessing the detergent properties required, had in addition the high stability usually associated with lubricants of high viscosity index. Although the viscosity index in itself is not a direct measure of oil stability, laboratory evidence is said to show that stability of an oil under heat and oxidizing influences usually increases with the viscosity index.

We are informed that Essolube HD has been exhaustively tested both in the laboratory and in service. It has passed the severe General Motors diesel test, which calls for a 500-hour run in a General Motors high-speed diesel engine under full load and at full speed without oil change, and it has been also formally approved by the Caterpillar Tractor Company for use in its diesel engines, having passed the severe 1000-hour endurance test in a Caterpillar

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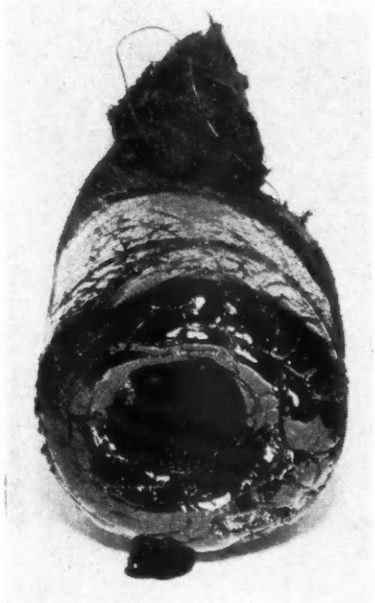


Oil filter bag removed after 3000 hours' service from engine in which compounded oil of poor stability was used

WHY WAIT FOR SPECIAL TOOLS?

...It's easy to Grind CARBOLOY STANDARD TOOLS to meet many special requirements... and you get them fast!

Need carbide tools FAST? Machines tied up—or *slowed* up—awaiting tool deliveries?

Carboloy *STANDARD* tools may be the answer...

Suitable—in the form you receive them—for 80% of all turning, boring, facing jobs on steel, cast iron, etc., Carboloy *STANDARD* tools can be quickly adapted, when necessary, to meet special requirements such as chamfering, grooving, undercutting, etc. All have LARGE tips to permit variation.

To change Carboloy STANDARD tools for special uses you simply grind—in your tool room—following the same fast, simple grinding methods used for re-grinding Carboloy tools. Many plants now maintain a stock of Carboloy STANDARD tools for quick adaptation to special shapes—as well as for daily use in standard forms.

This is important: If you have not already checked to see how many of your present carbide tool requirements can easily conform with STANDARD tool specifications, do so now. You'll save on initial tool cost—and eliminate needless delays.

Carboloy STANDARD tools are available in five styles and three grades, one for steel cutting, two for cast iron, brass, etc. You get them *FAST*, and at prices close to *steel tools*.

Send for catalog sheets GT-125.

STANDARD PROCEDURE FOR ALTERING TOOL FOR FACING AND TURNING TO A SHOULDER WHEN USING A SQUARE TOOL POST.
1.5 TO 2 TIMES DEPTH OF CUT
FOR EMERGENCY TOOLING... MAKE YOUR OWN
Order Standard Carboloy Blanks—available for rapid delivery. You mill or grind a recess in your tool shank—and braze in the standard Carboloy blank. Then grind—as easily as you now REGRIND—and the tool is ready for use.
Complete instructions furnished.
STYLE R-100
STYLE R-200
Carboloy standard blanks are furnished in two styles, 65 sizes, and in grades 78B for steel cutting, 44A & 883 for cast iron, aluminum, brass, etc.

Look for this triangular trade mark on tools you buy. It is your assurance of genuine Carboloy cemented carbide.

CARBOLOY COMPANY, INC.

11151 E. 8 Mile Rd. — Detroit, Mich.

Chicago • Cleveland • Los Angeles • Newark
Pittsburgh • Philadelphia • Worcester, Mass.

REPRESENTATIVES— F. Robbins Portland, Ore.—Seattle, Wash. G. F. Cotter Supply Co. Houston, Texas

CANADIAN REPRESENTATIVE—Canadian General Electric Co., Ltd., Toronto, Canada.

CARBOLOY

REG U S PAT OFF

TUNGSTEN CARBIDE—TANTALUM CARBIDE—TITANIUM CARBIDE

VISIT BOOTH 124—MACHINE AND TOOL PROGRESS EXHIBITION—DETROIT—MARCH 25-29, 1941

WE HAVE WHAT IT TAKES

to produce

Since large quantities of bearings are necessary in armaments and armament producing equipment, the vast production facilities of The Timken Roller Bearing Company, comprising among other things over 2,494,000 square feet of floor space under roof, assume a hard-to-over-rate importance. We are fully cognizant of this.

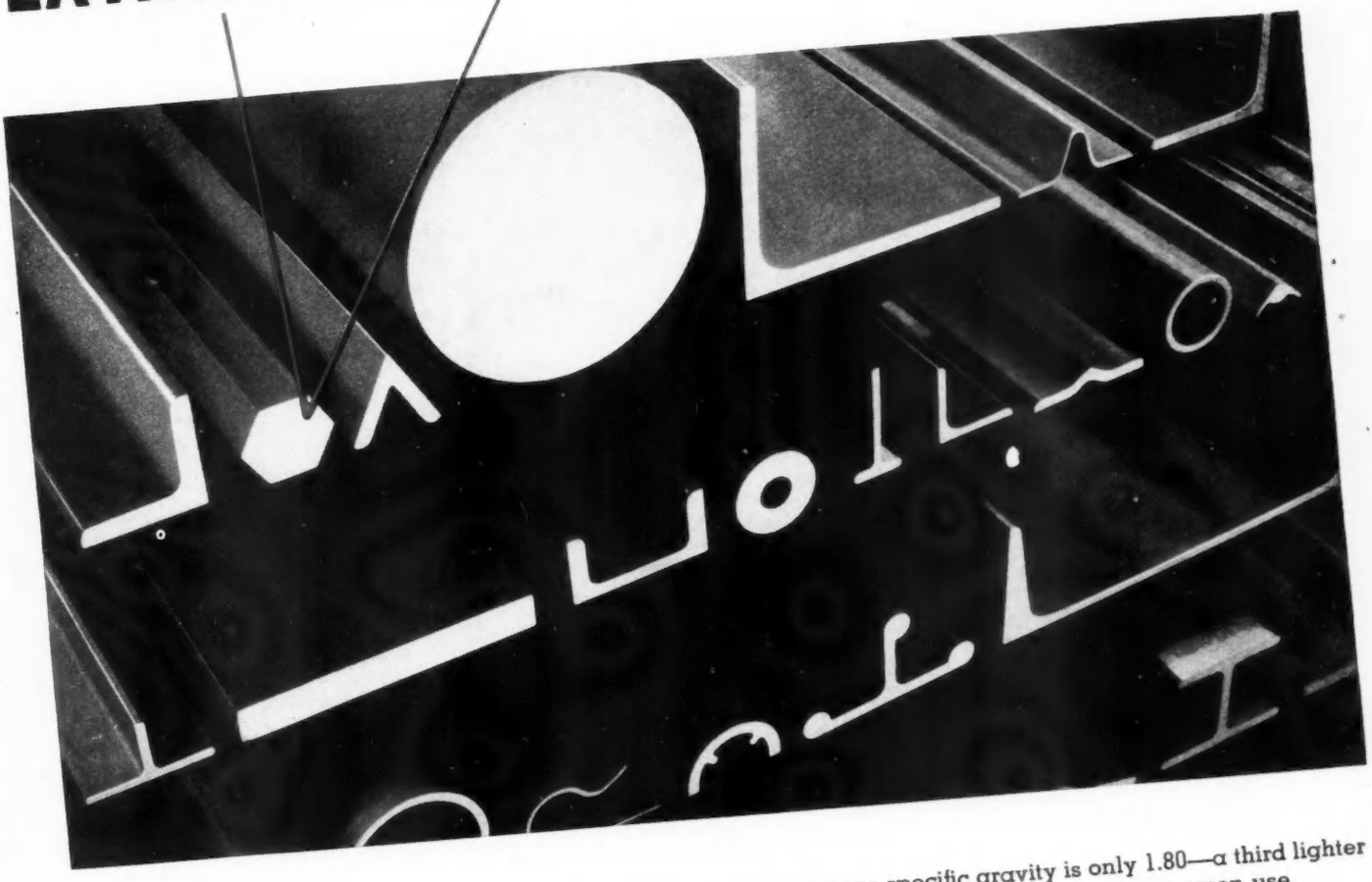
To anticipate an ever growing volume of defense orders and to continue to keep on top of our job for all industry, large plant additions have been completed, are now under construction and contracts have been placed for still more of them along with necessary equipment. Moreover, several projects are now under way which, while not increasing production, will help to assure *continued* production.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN
TAPERED ROLLER BEARINGS

DOWMETAL MAGNESIUM

EXTRUDED TO MEET MANY NEEDS



A wide variety of extruded shapes in both standard and special sections are available to manufacturers who wish to take advantage of the extraordinary lightness, strength and durability of DOWMETAL*. Fabrication of these Dow Magnesium Alloys now includes all methods commonly practiced.

DOWMETAL contains from 85 to 99 per cent magnesium. Its average specific gravity is only 1.80—a third lighter than any other structural metal in common use.

DOWMETAL has excellent engineering qualities. The material can be heated to the proper temperature (500-700° F.) for bending and forming without injury to the metal or loss of strength. Extruded shapes are normally shipped with Chrome-Pickle finish.

Technical information is always available on request.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

Branch Sales Offices: New York City, St. Louis, Chicago, San Francisco, Los Angeles, Seattle

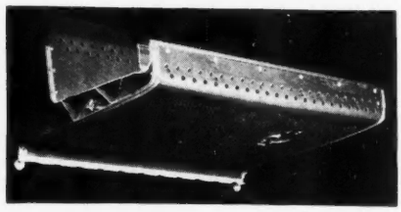
DOWMETAL
MAGNESIUM ALLOYS

LIGHTEST OF ALL STRUCTURAL METALS

*Trade Mark Reg. U. S. Pat. Off.

Bus Racks of Laminated Non-Metallic Material

LUGGAGE racks for 600 Greyhound buses recently placed in service are made of the panelling material Fybr-Tech, a product of Technical Plywoods, Chicago, Ill. This material was selected, we are informed, because it is sufficiently sturdy to withstand the rough treatment it will receive in service, and it is considerably lighter than the metal formerly used. It was also necessary to employ a material which is easy to work, since the rack consists of two panels, bent at sharp angles and bolted together. The hollow center thus formed was incorporated in the air-conditioning system of the coach. Air is passed through the duct thus formed and issues from hundreds of tiny vent holes punched in the lower panel of the rack. Fybr-Tech is said to meet these requirements, as it takes sharp bends and can be readily die-punched. With ordinary paint finish it is said to be unaffected by any moisture there may be in the air.



Sectional view of pressure element of G.M. condenser-type electric indicator

Fybr-Tech consists of a vulcanized fiber; resin-bound on both sides to a veneer core. It is claimed to be non-splitting, non-checking, resistant to cuts and scratches, and very tough. It can be worked with ordinary tools, can be bent to a ½-in. radius, and die-punches cleanly. It is said to take a fine even paint finish and to need no sanding before painting.

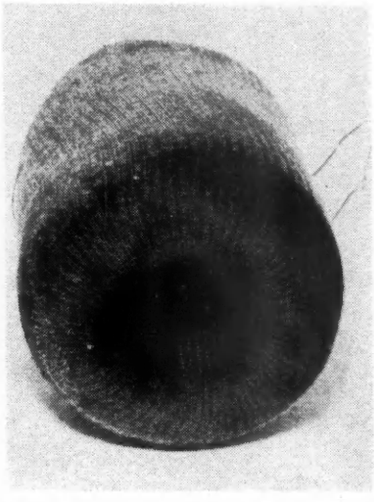
Higher Tractor Output

The production of tractors rose to 281,832 valued at $197,273,957 in 1940 from 215,462 valued at $157,577,449 in 1939, according to returns received by the Bureau of Census in its annual canvass of manufacturers of farm equipment. Wheel tractor production last year totaled 249,397 units valued at $136,796,511 compared with 185,558 valued at $110,856,746 in 1939. Combines (harvester-threshers) also showed an increase in unit output in 1940, rising to 46,545, but declining in value at $21,970,214, from 41,537 valued at $25,472,642 in 1939.

Essolube HD

(*Continued from page* 313)

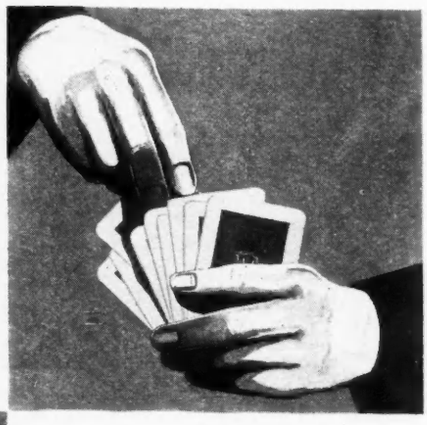
engine under both laboratory and field conditions. Essolube HD is said to be the first high-viscosity-index lubricant to obtain Caterpillar approval and also the first high-viscosity-index lubricant to have passed both the Caterpillar and General Motors engine test requirements. Many engineers consider the requirements of these two engines to be opposite extremes in the diesel field, so that an oil which meets them both should be satisfactory for any heavy-duty engine.

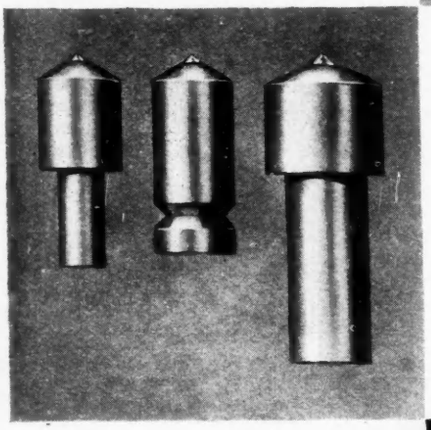


Oil filter bag removed after 3,000 hours' service from an engine using Essolube HD.

DIAMONDS ARE TRUMP WHEN INDUSTRY FACES AN EMERGENCY

WHEN an emergency like the present one arises, the demand for diamond tools always increases greatly. Many concerns, faced with the necessity of producing more, then learn of the wonderful capacity of industrial diamonds for the first time. They find that they can cut hard, abrasive materials faster and more accurately than by any other means.

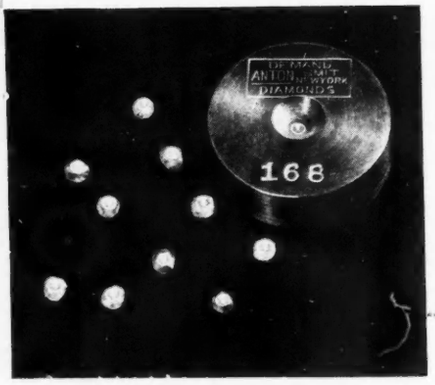




(Left to right): Landis Nib, Norton Nib, Cincinnati Nib.

If you are today handicapped by the lack of badly needed machine tools, it will pay you to investigate the possibilities of using diamond tools. Undoubtedly, you will find that you can turn out more work with the machines you now have if you use diamond cutting tools. The increases may be sufficient to enable you to handle present requirements without the need of additional machines or, at least, to keep you from falling too far behind before additional machine tools can be delivered.

Prominent as an importer of industrial diamonds for more than thirty years, Anton Smit and Company controls all steps in the production of diamond tools—mining, importing, tool making, and servicing. Large stocks of Bortz, Ballas, Carbons, Points, Splint, Crushing Boart, Powder, etc., in all sizes and qualities on hand. Send for illustrated folder and prices, or send blueprints for shaped tools.



ANTON SMIT & CO., INC.
24 STATE ST. (near Battery) NEW YORK, N. Y., U. S. A.

WITH THE *Speed of a Comet*

OVER 500 MILLION A YEAR

BLAZES THE *Speed Nut System*

Like a comet, the SPEED NUT System of spring tension assembly blazes through the maze of waste motion and charts a new course by releasing assembly lines from the burden of useless parts and lost motion.

The SPEED NUT System also increases the service value of your product by protecting it against loosening from vibration. It is the only one piece fastening device that assures you a double spring tension lock.

SPEED NUTS and Speed Clips hold bolts, screws, rivets and studs. Manufactured in over 700 shapes and sizes for metal, wood, ceramic or plastic applications. The nut that literally gives you "spitfire" assembly speed and stops loosening from vibration.

Samples and engineering data will be mailed you promptly on receipt of your assembly details.

TINNERMAN PRODUCTS, INC. 2059 FULTON ROAD, CLEVELAND, OHIO

Manufacturers of Patented SPEED NUTS

CANADA: Wallace Barnes Co. Ltd., Hamilton, Ontario IN ENGLAND: Simmonds Aerocessories, Ltd., London IN FRANCE: Aerocessoires Simmonds, S. A., Paris

OVER A BILLION IN USE—OVER 700 SHAPES AND SIZES

The Automotive Industries Contribution to the National Defense

(*Continued from page* 197)

Approximately 29 per cent (28.7) returns were received from our questionnaire which was very gratifying not only as to number of returns but also as to type of returns. The replies gave a true cross section of the industry covered and included those companies which found it necessary to hire anywhere from 5 to 33,500 new employes. Specific data were obtained from the East to the West Coast and from the Canadian border to Florida and Texas. The total value of the contracts of the companies who replied to questionnaires represents 45 per cent of the value of all contracts of the automotive industry and its suppliers. This report, the summary of which was presented in the opening paragraph of this article, is a projection of these returns.

A totalization of the figures obtained from the 115 or 28.7 returns gives the following:

23,192,476 sq. ft. of floor space added or to be added.

$269,883,030* of new plant equipment added or to be added.

266,155 new employes hired or to be hired.

$426,967,500 additional annual payrolls added or to be added.

* Includes cost of some new plant.

Extended to cover the entire list of companies under consideration these figures give the following estimates for the 841 automotive companies and suppliers:

80,600,000 sq. ft. of floor space added or to be added.

$940,000,000 new plant equipment added or to be added.

929,000 new employes hired or to be hired.

$1,490,000,000 additional annual payrolls added or to be added.

It should be stated here that it is known that many of the companies who failed to reply to our survey are building huge new plants, equipping them with new machinery of every description, preparing to employ thousands of new workers and giving out many subcontracts which will of necessity cause smaller manufacturing concerns to expand materially. Other companies are preparing to utilize vacant space in their own plant capacity, but have first to equip it with new machinery and then hire workers to operate it.

While these data pertaining to the economic factors produced by the carrying out of the defense contracts may be regarded merely as estimates that are strikingly impressive, nevertheless it is believed that they are arrived at from a sound basis by a justifiable method.

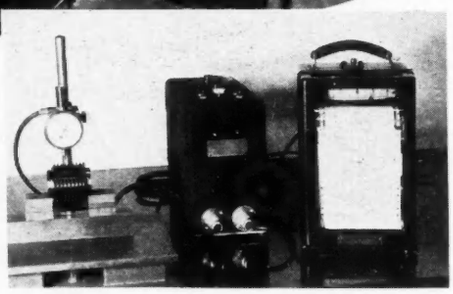
As the questionnaire clearly indicates, AUTOMOTIVE INDUSTRIES does not attempt to show that all of these economic factors have already been realized but rather that while part of the new building, new equipment, new employes and new payrolls have already materialized, it will not be until the latter part of this year or early in 1942 that full realization of our estimates will be fulfilled. Following is the questionnaire:

1. Number of square feet of additional plant space needed, above your July 1, 1940, plant capacity, to fill new defense contracts you *have received* since that date or *expect to receive*.....sq. ft.

2. Estimated dollar volume of new plant equipment required, above your July 1, 1940, total equipment, for completing the new defense contracts you *have received or expect to receive.* $.....

3. Number of additional employes it has been necessary to hire since July 1, 1940, or you anticipate hiring in order to carry on the work of the new defense contracts you *have received* or *expect to receive.* .....

4. Estimated dollar volume of additional payroll needed to take care of the number of new employes mentioned in question number 3. $.....



Production of INSTRUMENTS In Lots of One!

"PHYSICISTS Research Company? They're the builders of the Profilometer, of course." That statement, while entirely true, is incomplete. With the steadily increasing importance of accurate measurement of surface roughness, the Profilometer has become widely known and is in volume production. In addition, however, Physicists Research Company builds *special* instruments for specific inspection purposes—or for individual research or production control jobs.

Companies in widely diversified industries have found, through the facilities of the Physicists Research Company, the means to secure definite information concerning important qualities of their particular products. Theirs were problems which were "different"—just as yours must be. In each of these cases industrial physics methods applied to the mechanical problem produced a practical solution. The finished instruments were developed and built in the modern, well-equipped Physicists Research laboratories and shop by physicists and highly skilled instrument makers.

An instrument may be designed and built to be the exact answer to *your* particular problem. Why not learn to your own satisfaction what can be accomplished? We'll be more than glad to discuss your requirements with you—without obligating you in any way.

VISIT OUR BOOTH 112 AT THE A.S.T.E. SHOW

PHYSICISTS RESEARCH COMPANY
343 SOUTH MAIN ST. • ANN ARBOR, MICH.